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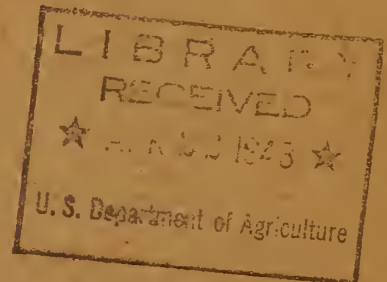
SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR OREGON

AS OF

APRIL 1, 1943

\* \* \*



Issued April 10, 1943

by

Division of Irrigation, Soil Conservation Service  
United States Department of Agriculture  
and

Oregon Agricultural Experiment Station, Medford Branch  
cooperating

\* \* \* \* \*

Data included in this report were obtained by the agencies listed above, in cooperation with the Oregon State Engineer, U. S. Forest Service, National Park Service and other Federal, State and local organizations. 1/

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WATER SUPPLY OUTLOOK

The outlook for Oregon 1943 water supply is uniformly the best since 1938, but in some areas greatest supplies since 1933 are indicated, and in a few areas water supply is expected to be the greatest since 1921.

Precipitation through the State, except for the Willamette valley, continued less than normal during March. Snow cover on a few courses increased during March but decreased on more. Nevertheless, February 1 snow cover was sufficiently great that remaining snow supplies of April 1, plus uniformly well-restored watershed soil moisture, give every assurance of above-normal stream flow during the irrigation season.

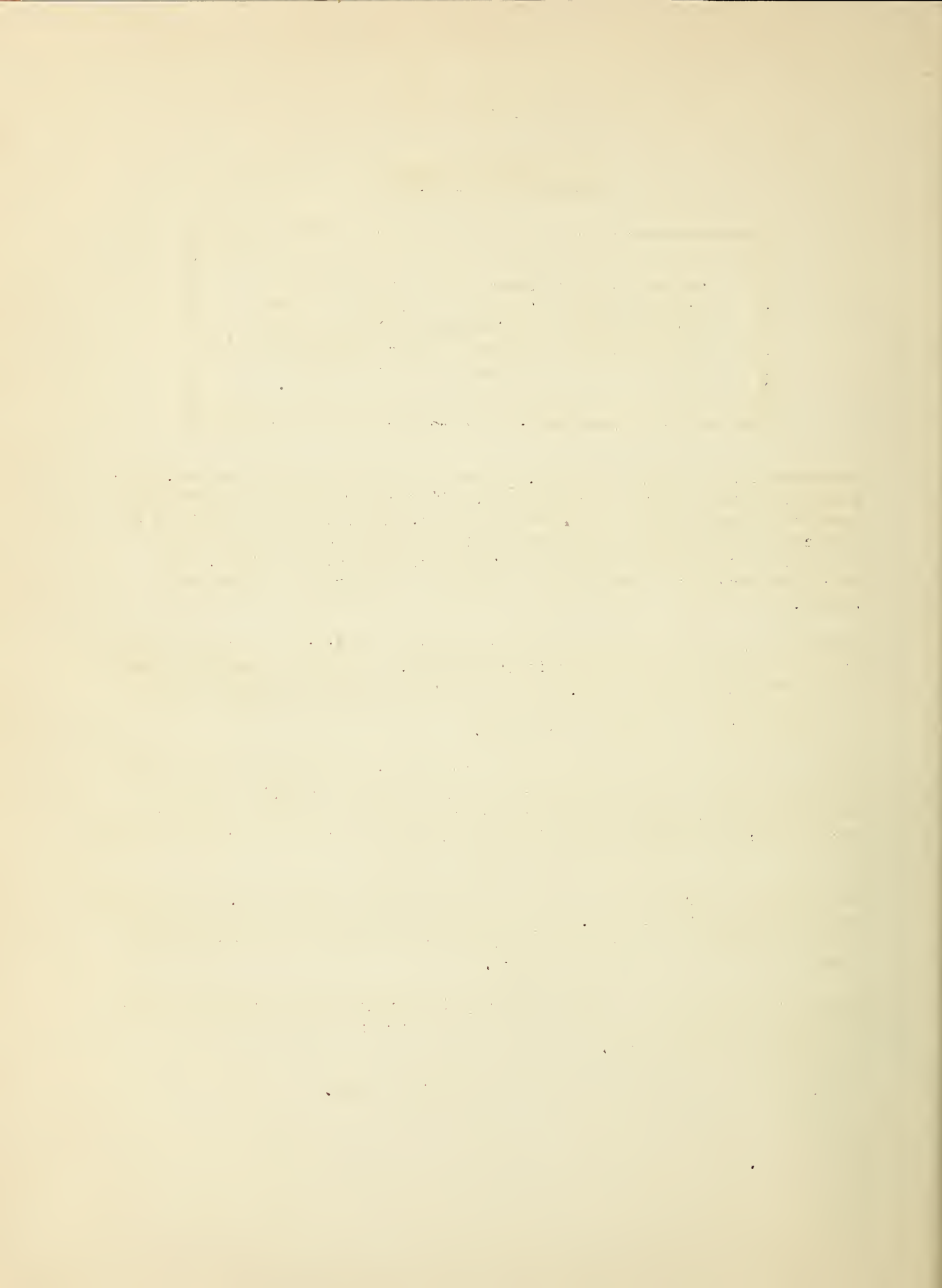
Earlier than usual spring run-off, approaching fairly high stages, occurred in a few stream basins in late March. This has markedly reduced low elevation snow supplies, but does not necessarily guarantee that high peaks will not recur this spring on those same streams, although the probability is greatly decreased.

Total water stored in all reservoirs is very slightly the greatest for several years and more reservoirs are half or better full than in any year since 1939. Even greater reservoired supplies would exist but for the fact that more reservoirs than usual are still reserving storage space to reduce anticipated peak stream flows.

Precipitation accumulated in Oregon valleys since October 1, is uniformly and markedly above average. Deep soil moisture, consequently, is the best for several years in many locations and in numerous places soils remain so wet as to delay farm work.

No water shortages are foreseen in any important Oregon irrigated section, and the outlook is for above-normal stream flow with which to generate electric energy.

Detailed forecasts begin on Page 15 of this report.





# COMPARISON OF SNOW COVER AS OF APRIL FIRST WITH THAT OF PREVIOUS YEARS

Snow-stored water now present above 5,000 feet:

As per cent of that present one month ago -- 94  
 As per cent of that present one year ago -- 141  
 As per cent of that present two years ago -- 173  
 As per cent of average -- 132

Snow-stored water now present from 2,000-5,000 feet:

As per cent of that present one month ago -- 76  
 As per cent of that present one year ago -- 197  
 As per cent of that present two years ago -- 923  
 As per cent of average -- 162

Snow water content on 64 per cent of all measured courses is greater than at this time in 1942, and in 77 per cent of the comparisons, is greater than on about April 1 of 1941. Snow water content on 64 per cent of all measured courses is greater than average.

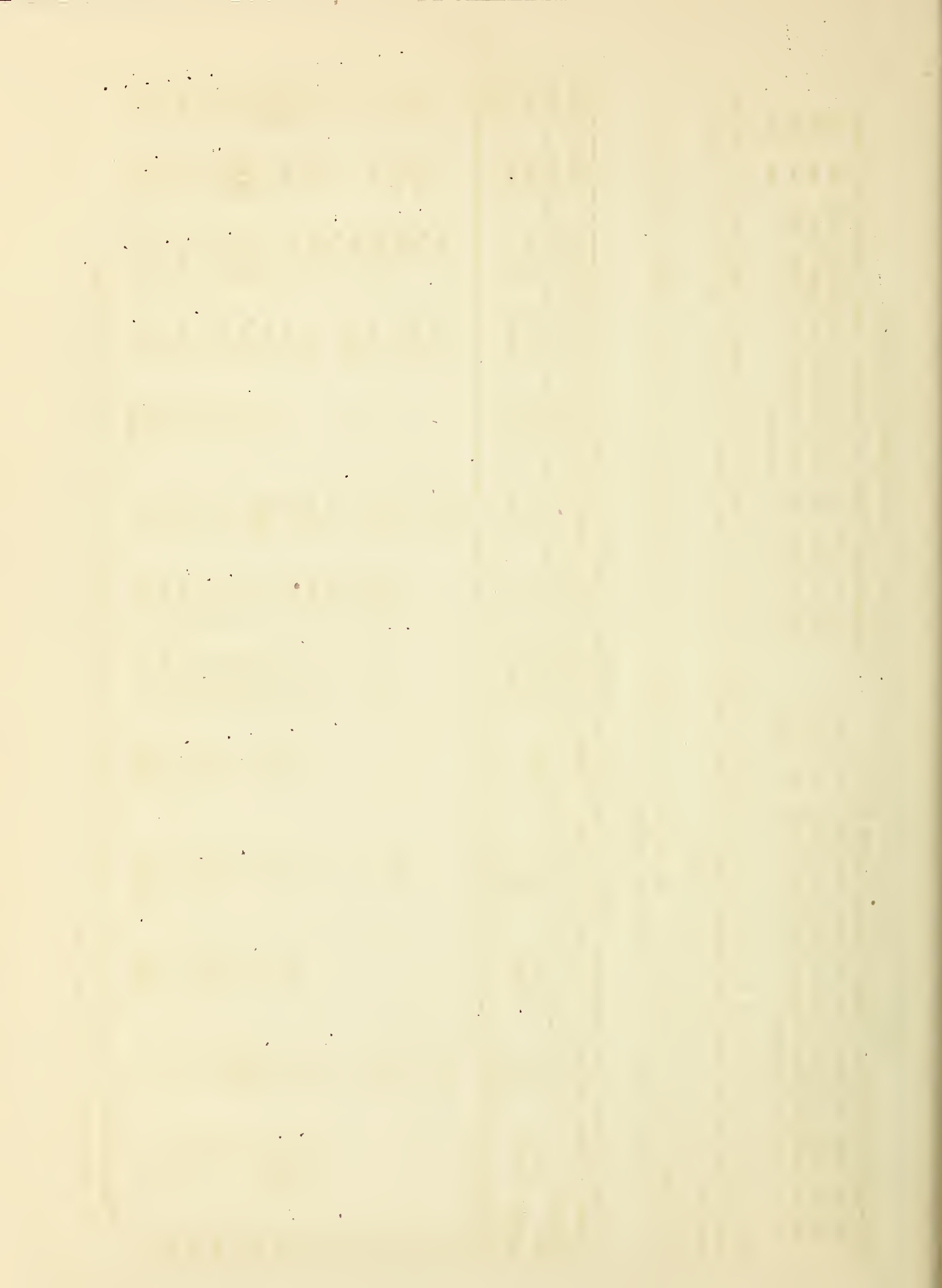
The intent of the tabulation below is to show in a general way the relationship of April 1, 1943 snow cover to that of earlier years at a comparable date.

Snow Water Content (Inches) as of About April 1

Stream Basin	Owyhee	Malheur-- John Day	Harney-- John Day	John Day-- Burnt	Powder	Bourne	Aneroid Lake	Grande Ronde	Walla Walla	Crooked amas	Clack- amas	William- Desch.	Rogue- Umpqua	Klam- Rogue	Klam- Rogue
Snow Course	Big Bend	Blue Mt.	Izee Summit	Blue Mt.	Summit				Toll- gate	Ochoco Mdws.	Peavine Ridge	Cascade Summit	Diam. Lake	Annie Sprg.	Billie Creek
Year		Springs													Divide
1928										7.5		28.1	9.4*	20.8	
1929		9.4								7.8		10.0	3.5*	20.5	0.0
1930		4.1								0.6		16.2	9.0*	26.1	13.1
1931		9.1		5.2					21.7	6.2		42.0	23.8*	-	-
1932		22.3		-			41.1		41.4	12.7		43.3	33.0*	-	31.3
1933		22.4		-			-		<u>36.6</u>	-			1.4*	-	-
1934		-		-			-		0.0	0.0		-	10.2*	-	-
1935	8.8	11.0		-			33.1		25.6	10.5		35.1	19.2*	55.8	32.1
1936	19.2	18.2	10.5	9.6		18.3	32.5		41.3	12.6		36.0	23.2	56.1	38.2
1937	10.5	16.1	7.5	6.2		10.5	27.9		25.9	<u>15.0</u>	25.2	32.4	33.1	43.5	<u>26.6</u>
1938	11.4	<u>23.4</u>	8.8	8.9		17.1	47.3		23.0	<u>14.7</u>	23.7	31.4	19.8	61.9	26.4
1939	3.4	11.1	6.2	3.0		11.1	30.1		29.8	7.6	23.3	38.5	37.4	37.4	33.1
1940	3.8	8.8	0.0	1.0		11.9	31.5		18.7	3.8	2.9	15.4	9.8	44.1	9.4
1941	9.7	9.8	3.1	2.8		10.3	28.4		12.1	4.6	0.0	11.4	6.7	39.1	6.7
1942	10.4	12.6	6.3	9.0		13.6	33.6		18.4	9.9	9.3	19.7	12.1	31.9	19.3
1943	15.3	21.8	10.6	12.2		22.6	43.1		34.6	13.1	<u>35.5</u>	39.4	31.3	49.9	31.3

Underscored is greatest April 1 water content of record period for each snow course shown.

\* From COPCO Water Station.

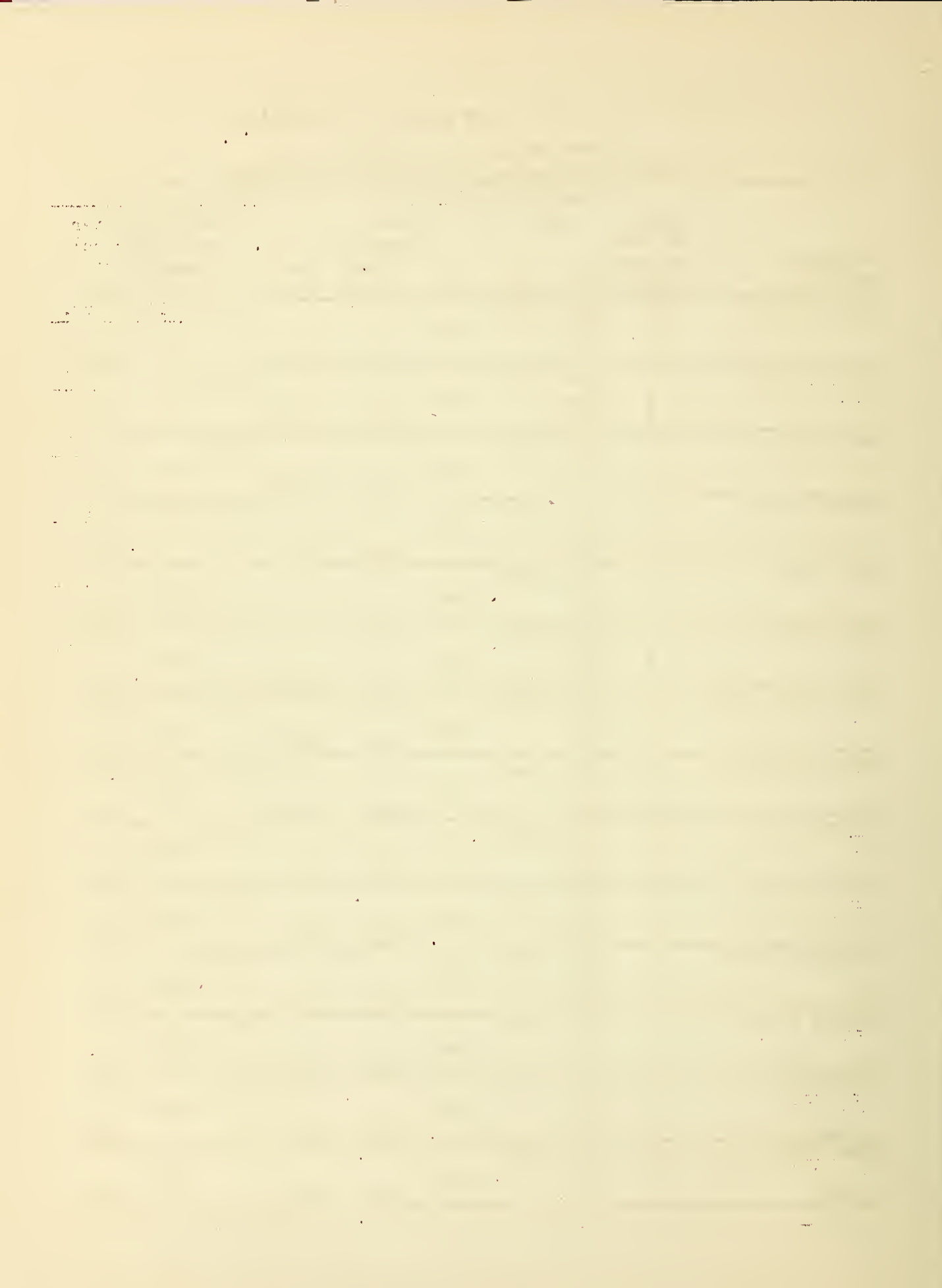




STATUS OF SNOW COVER AS OF APRIL FIRST (Cont'd.)

Summary of Snow Survey Data  
by Tributary Drainages as of About April First

Tributary Drainage	Number of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches)			Yrs. of rec- ord	1943 Snow Water Depth (Inches) as Per Cent of that in		
		1943	1942	1941		1942	1941	Avg.
Owyhee River	15	8.7	8.3			105		
	14	9.3		7.2			129	
	15	8.7			7.6	1-8		114
Malheur River	5	10.6	7.7			138		
	5	10.6		5.4			196	
	5	10.6			6.6	5-13		161
Burnt River	3	13.6	10.2			133		
	3	13.6		6.6			206	
	3	13.6			7.1	4-10		192
Powder River	7	21.5	13.7			157		
	7	21.5		11.7			184	
	7	21.5			14.0	4-7		154
Pine Creek	1	36.7	24.7			148		
	1	36.7		29.1			126	
	1	36.7			27.0	5		136
Grande Ronde River	10	27.8	17.3			161		
	9	27.2		13.1			208	
	10	27.8			19.0	1-14		146
Walla Walla River	1	34.6	18.4			188		
	1	34.6		12.1			286	
	1	34.6			24.5	12		141
Umatilla River	4	16.0	11.3			142		
	4	16.0		4.8			333	
	4	16.0			11.8	4-14		136
Willow Creek	1	9.0	12.2			74		
	1	9.0		2.8			321	
	1	9.0			9.6	14		94
John Day River	9	14.8	10.5			141		
	9	14.8		6.4			231	
	9	14.8			10.0	4-14		148
Deschutes River	7	28.4	13.6			209		
	7	28.4		7.2			394	
	7	28.4			18.5	5-14		154
Crooked River	4	8.6	7.6			113		
	4	8.6		2.9			296	
	4	8.6			6.1	5-13		141
Hood River	1	21.4	11.2			191		
	1	21.4		1.1			1945	
	1	21.4			7.5	10		285
Sandy River	3	47.2	21.5			220		
	3	47.2		6.8			694	
	3	47.2			25.7	6-11		184



Tributary Drainage	Number of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches)			Yrs. of rec- ord	1943 Snow Water Depth (Inches) as Per Cent of that in		
		1943	1942	1941		1942	1941	Avg.
Clackamas River	1	35.5	9.3			382		
	1	35.5		0.0			-	
	1	35.5			14.1	6		252
Willamette River	9	34.9	16.6			210		
	9	34.9		7.3			478	
	9	34.9			17.5	2-13		199
Silver Lake Basin	1	3.3	-			-		
	1	3.3		0.0			-	
	1	3.3			0.0	2		-
Chewaucan River	1	7.0	5.3			132		
	1	7.0		5.1			137	
	1	7.0			4.0	4		175
Harney Basin	8	10.2	9.2			111		
	8	10.2		6.9			148	
	8	10.2			7.7	3-12		132
Guano Lake	2	4.6	8.6			53		
	2	4.6		4.8			96	
	2	4.6			5.0	3		92
Warner Lake	1	13.5	10.6			127		
	1	13.5		8.1			167	
	1	13.5			7.2	4		188
Umpqua River	5	20.9	10.2			205		
	5	20.9		5.5			380	
	5	20.9			14.7	4-7		142
Upper Rogue River	12	23.2	15.0			155		
	13	21.5		11.7			184	
	13	21.5			19.7	6-12		109
Applegate River	5	17.3	21.2			82		
	5	17.3		22.8			76	
	5	17.3			24.9	2-8		69
Illinois River	2	9.5	11.1			86		
	2	9.5		12.6			75	
	2	9.5			19.4	6-7		49
Klamath Lake Basin	22*	14.0	8.6			163		
	22*	14.0		7.3			192	
	22*	14.0			11.3	4-16		124
Goose Lake Basin	4*	5.4	5.0			108		
	4*	5.4		2.4			225	
	4*	5.4			4.4	4-12		123

\* Including Copco water measurement stations.

# STATUS OF RESERVOIR STORAGE AS OF APRIL FIRST

In the following tabulation, water storage in acre feet in important Oregon reservoirs as of about April 1, 1943, is compared with storage as of approximately the same date in 1942, 1941, 1940 and 1939.

Storage Reservoir	Stream Basin	Capacity Acre Ft.	Acre Feet in Storage				
			About 4-1-43	About 4-1-42	About 4-1-41	About 4-1-40	About 4-1-39
Agency Valley	Malheur	60,000	32,375 <sup>c</sup>	Full	58,980	Full	57,760
Antelope	Owyhee	36,550	27,733	19,871	24,500	18,093	5,990
Clear Lake	Lost River	440,240 <sup>b</sup>	362,610 <sup>b,c</sup>	304,780 <sup>b</sup>	257,790 <sup>b</sup>	277,920 <sup>b</sup>	249,600 <sup>b</sup>
Cold Springs	Umatilla	50,000	Full	48,600	49,850	45,250	49,750
Cottage Grove	Willamette	30,000 <sup>b</sup>	20,600	-	-	-	-
Cottonwood	Goose Lake	4,160	Empty <sup>c</sup>	No Report	1,505	3,541	2,295
Crane Prairie	Deschutes	50,000	40,444	27,100	26,420	36,240 <sup>a</sup>	32,500 <sup>a</sup>
Crescent Lake	Deschutes	80,000	34,810	21,980	21,980	34,440 <sup>a</sup>	57,140 <sup>a</sup>
Drew Creek	Goose Lake	62,500	62,000	53,000	52,000	Full	48,100
Emigrant Gap	Rogue	8,200	Full	Full	8,132	Full	8,132
Fern Ridge	Willamette	95,000 <sup>b</sup>	73,300	-	-	-	-
Fish Lake	Rogue	7,720	5,998	3,719	3,799	4,928	6,243 <sup>a</sup>
Fourmile Lake	Klamath <sup>d</sup>	14,000	4,515	3,473	3,365	8,198	11,440 <sup>a</sup>
Gerber	Klamath	94,000	75,470 <sup>b,c</sup>	57,720 <sup>b</sup>	62,420 <sup>b,c</sup>	80,120 <sup>b</sup>	54,390 <sup>b</sup>
Hyatt Prairie	Klamath <sup>d</sup>	16,000	12,720	7,403	4,356	7,407	12,110 <sup>a</sup>
McKay	Umatilla	74,000	64,280 <sup>c</sup>	71,210	34,250	54,160	60,400
Ochoco	Crooked	47,500	Full	27,060	10,060	17,490	30,630
Owyhee	Owyhee	715,000 <sup>b</sup>	617,200 <sup>b,c</sup>	634,440 <sup>b</sup>	Full	611,150 <sup>b</sup>	688,850 <sup>b</sup>
Thief Valley	Powder	17,400	Full	Full	Full	Full	13,420
Thompson Valley	Silver Lake	19,000	15,000	2,510	7,310	10,710	6,230
Unity	Burnt	25,260	12,166 <sup>c</sup>	14,660	20,430	25,220	20,950
Upper Klamath	Klamath	524,800 <sup>b</sup>	391,500 <sup>b,c</sup>	461,600 <sup>b</sup>	404,500 <sup>b</sup>	488,400 <sup>b</sup>	462,500 <sup>b</sup>
Wallowa Lake	Wallowa	40,920	26,000	33,180	19,420	13,820	38,200
Warmsprings	Malheur	190,000	179,000 <sup>c</sup>	Full	181,400	157,400	170,900
Wickiup	Deschutes	180,000 <sup>f</sup>	10,000 <sup>c</sup>	-	-	-	-
Willow Creek	Malheur	26,000	9,000 <sup>c</sup>	No Report	No Report	6,500 <sup>e</sup>	8,250

a - Estimated

b - Available for use

c - Water being by-passed, or water level being lowered, to provide space for anticipated inflow.

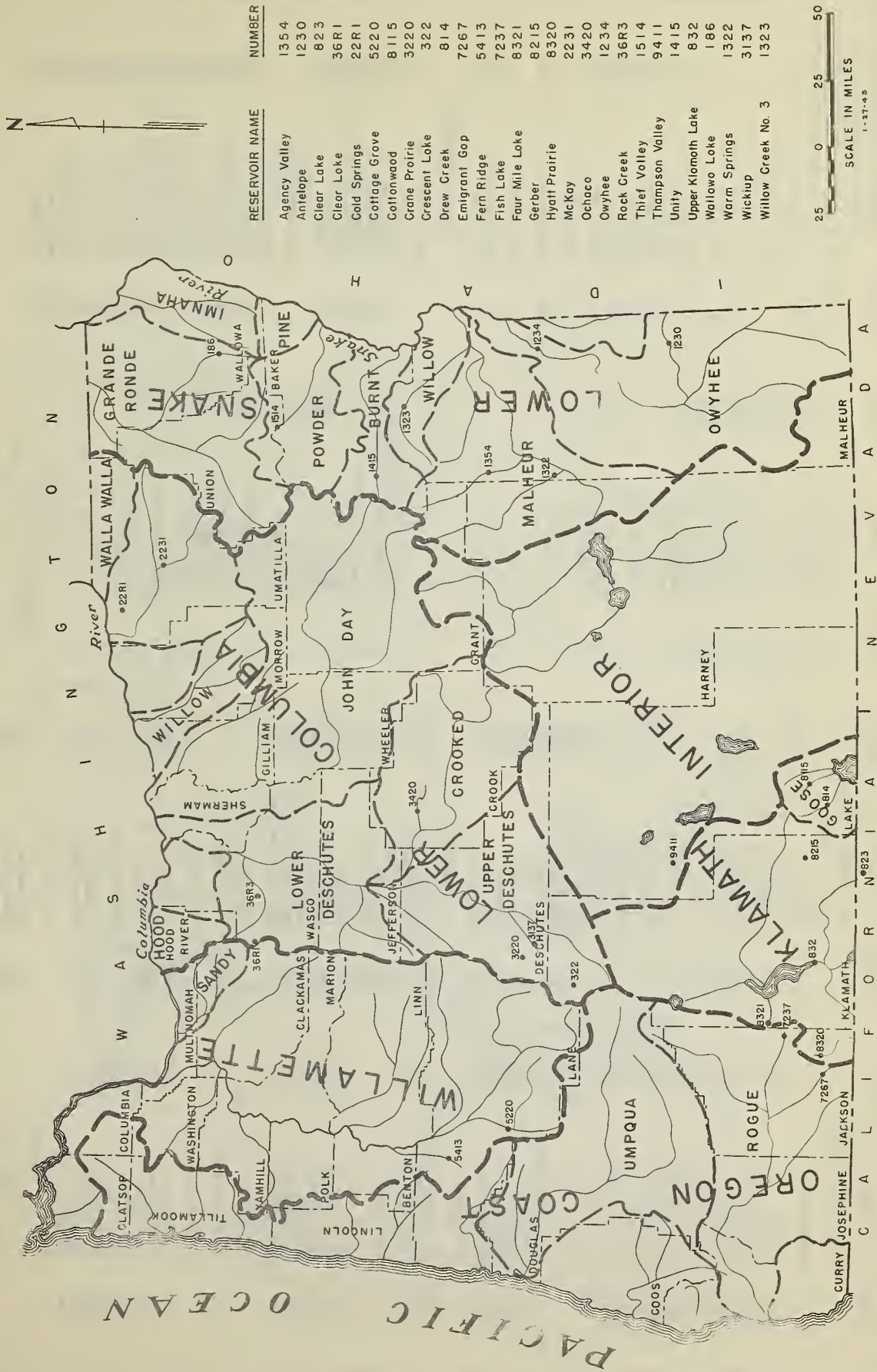
d - By ditch to Rogue River side

e - Approximate

f - To store not more than 22,000 acre feet in 1943.



# IMPORTANT OREGON RESERVOIRS



## INDEX TO SNOW COURSES

Number	Name	Elev.	Number	Name	Elev.	Number	Name	Elev.
UPPER COLUMBIA DRAINAGE								
Lower Snake In Oregon								
OWYHEE RIVER								
Nev.1	Big Bend	6800	212	Tollgate	5070	831	Annie Spring	6018
Nev.2	Buckskin, Lower	6800				722	Billie Creek Divide	6000
Nev.3	Buckskin, Upper	8200				834	Chemult No. 1	4760
952	Fish Creek	7900				Calif.	Crowder Flat	5200
Nev.5	Fry Canyon	6900	222	Emigrant Springs	3925	723	Hwyatt Prairie Reservoir	4900
Nev.6	Gold Creek Ranger Sta.	6600	223	Lucky Strike	5050	835	Lake of the Woods	4960
Nev.7	Granite Peak	8600	221	Mecham	4200	811	Quartz Mountain	5320
Nev.8	Jack Creek, Lower	7000	221	Tollgate	5070	7211	Seven Lakes No. 1	6800
Nev.9	Jack Creek, Upper	7800				7212	Seven Lakes No. 2	6200
Nev.10	Martin Creek	7000				837	Strawberry	5600
Nev.11	Rodeo Flat	7000				841	Sunmer Rim	7200
Ide.12	Silver City	6400	241	Arbuckle Mountain	5400	836	Sun Mountain	5350
951	Silvies	6900				842	Taylor Butte	5100
Ide.13	South Canyon	5100					GOOSE LAKE BASIN	
Nev.15	Taylor Canyon	5200				911A	Camas Creek	5720
MALHEUR RIVER								
			241	Arbuckle Mountain	5400	811	Quartz Mountain	5320
			246A	Beech Creek Summit	4800	837	Strawberry	5600
			133	Blue Mountain Spring	5900			
			141	Blue Mountain Summit	5098			
133	Blue Mountain Spring	5900						
137	Crane Prairie	5375						
136	Lake Creek	5120						
134	Rock Spring	5100						
135	Stinking Water	4800						
BURNT RIVER								
141	Blue Mountain Summit	5098						
156	Dooley Mountain	5430						
142	Tipton	5100						
POWDER RIVER								
155	Anthony Lake	7125						
154	Bourne	5800						
156	Dooley Mountain	5430						
151B	Ellertson Meadows	5400						
249	Gold Center	5340						
184	Summit Springs	6000						
185	Taylor Green	5740						
PINE CREEK								
161	Schneider Meadows	5400						
GRANDE RONDE RIVER								
183	Anerold Lake	7180						
155	Anthony Lake	7125						
188	Beaver Reservoir	5340						
187	Camp Carson	5970						
248	Moss Spring	5860						
184	Schoolmarm	4775						
185	Summit Springs	6000						
212	Taylor Green	5740						
	Tollgate	5070						
LOWER COLUMBIA DRAINAGE								
WALLA WALLA RIVER								
			212	Tollgate	5070	831	Annie Spring	6018
UMATILLA RIVER								
						722	Billie Creek Divide	6000
						834	Chemult No. 1	4760
						Calif.	Crowder Flat	5200
						723	Hwyatt Prairie Reservoir	4900
						835	Lake of the Woods	4960
						811	Quartz Mountain	5320
						7211	Seven Lakes No. 1	6800
						7212	Seven Lakes No. 2	6200
						837	Strawberry	5600
WILLOW CREEK								
			241	Arbuckle Mountain	5400	841	Sunmer Rim	7200
JOHN DAY RIVER								
			241	Arbuckle Mountain	5400	811	Quartz Mountain	5320
			246A	Beech Creek Summit	4800	837	Strawberry	5600
			133	Blue Mountain Spring	5900			
			141	Blue Mountain Summit	5098			
			244	Dixie Springs	6850			
			249	Gold Center	5340			
			964	Izee Summit	5293			
			245	Olive Lake	6000			
			248	Schoolmarm	4775			
			247	Starr Ridge	5156			









# STATUS OF VALLEY PRECIPITATION AS OF OCTOBER 1 TO DATE

Month	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Period	
Section	P	D	P	D	P	D	P	D	P	D	P	D	P	D
S. E.	0.35	-0.34	2.56	+1.42	1.91	+0.88	1.77	+0.57	0.36	-0.68	0.5	-0.4	7.45	+1.45
S. C.	0.37	-0.63	4.38	+2.46	3.78	+1.40	3.95	+1.97	1.12	-0.34	1.1	-0.1	14.70	+4.76
N. C.	0.54	-0.22	4.41	+2.83	3.98	+2.05	2.85	+1.06	0.43	-0.74	0.6	-0.3	12.81	+4.68
Col. Riv.	0.79	-0.22	3.58	+1.85	3.03	+1.43	1.62	+0.03	0.73	-0.60	1.0	0.0	10.75	+2.49
Wal. Mts.	1.30	-0.19	3.50	+1.57	2.87	+0.57	2.28	+0.73	1.22	-0.40	1.5	-0.2	12.67	+2.08
Blue Mts.	1.06	-0.37	3.31	+1.33	3.36	+1.45	2.43	+0.33	1.03	-0.79	1.1	-0.6	12.29	+1.35
Southern	1.12	-0.77	8.98	+5.22	6.82	+3.42	6.89	+3.23	1.30	-1.83	2.8	-0.2	27.91	+9.07
Willamette	3.22	-0.63	17.53	+9.60	14.62	+6.55	8.18	+0.65	5.41	-0.70	6.0	+3.1	54.96	+18.57
Area	1.09	-0.42	6.03	+3.28	5.05	+2.29	3.75	+1.07	1.45	-0.76	1.8	+0.2	19.19	+5.56

P - Inches precipitation.

D - Inches departure from normal.

S. E. - Southeastern Oregon range lands, Harney and Malheur Counties.

S. C. - Southcentral Oregon range lands, Lake County and Klamath County, except the Cascade Mountains.

N. C. - Northcentral Oregon wheat and range lands, Crook, Deschutes, Jefferson, Wheeler and part of Grant Counties.

Col. Riv. - Columbia River area, wheat and range lands, Gilliam, Morrow, Sherman, Wasco and part of Umatilla Counties.

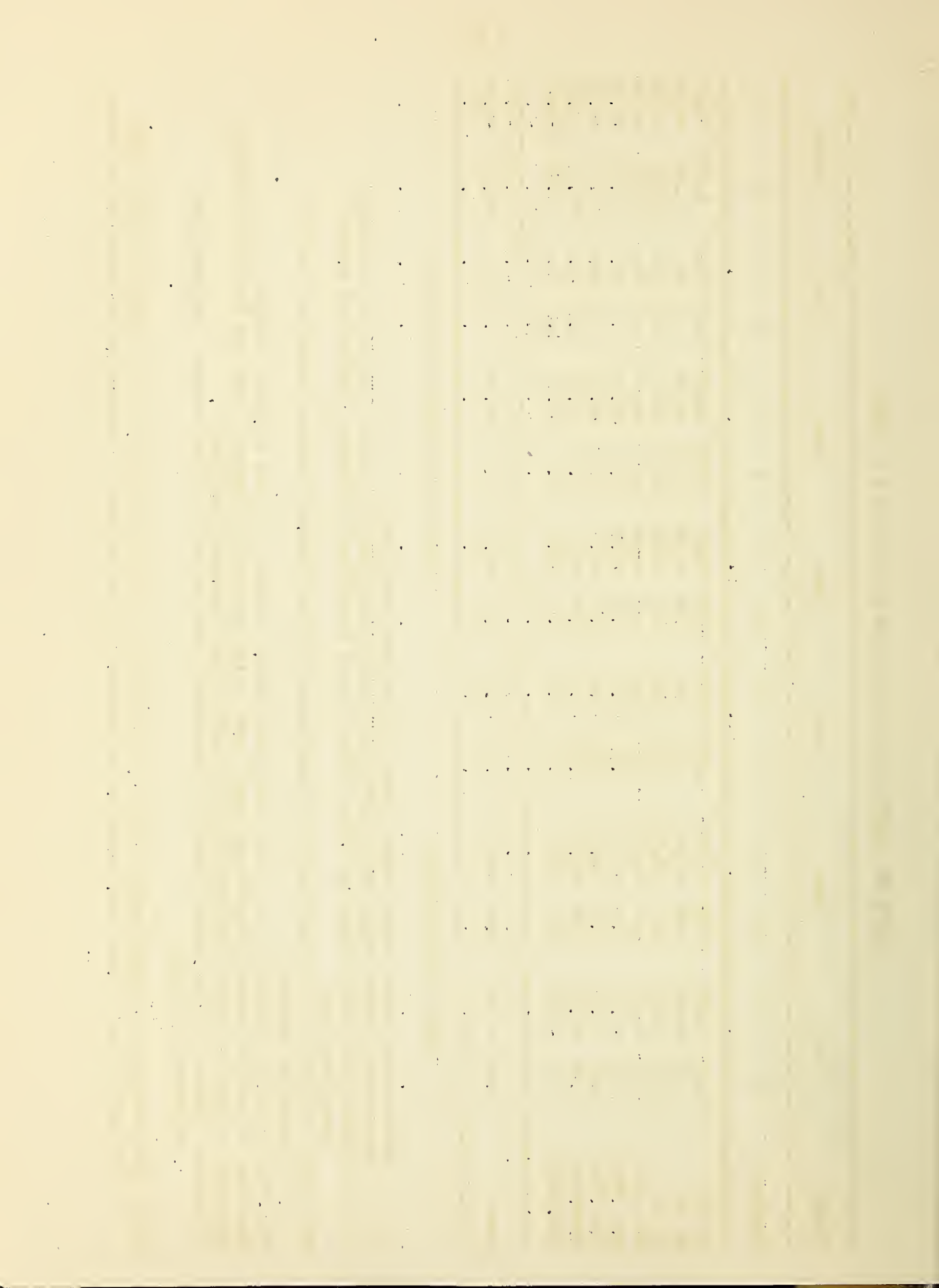
Wal. Mts. - Wallowa Mountain area, forest and range lands, Wallowa and part of Baker County.

Blue Mts. - The Blue Mountain forest and range area, Union and parts of Baker, Grant and Umatilla Counties.

Southern - Southern Oregon irrigated section, Jackson and Josephine Counties.

Willamette - Parts of Polk, Benton, Yamhill, Washington, Lane and all of Linn, Marion, Clackamas and Multnomah Counties.

Note: Data for the last month shown above are preliminary, as they are based on a few stations only. Data for earlier months have been corrected to include all the stations in climatological data for the area.



Measurements Received Too Late For Inclusion In March 9, 1943 Report

TRIBUTARY BASINS		LOCATION		SNOW COVER MEASUREMENTS									
(Primary & Secondary & Snow Courses)	Oregon Number Sec.	Twp.	Range	Elev.	Date	About March 1, 1943		Average Water Depth (Inches)					
						Avg. Snow Depth (In.)	Avg. Water Depth (In.)	One Month Ago (2-1-43)	One Year Ago (3-1-42)	Two Years Ago (3-1-41)	Avg. for past yrs. of rec- ord		
OWYHEE RIVER													
					U P P E R	C O L U M B I A	D R A I N A G E						
					L O W E R	S N A K E	I N O R E G O N						
Upper Jack Creek	Nev.	9	42N	53E	7800	3-4	32.8	12.2	-	11.5	9.4	10.0	7
Lower Jack Creek	Nev.	19	42N	53E	7000	3-3	10.5	3.3	-	6.7	4.2	5.2	12
Rodeo Flat	Nev.	31	43N	54E	7000	3-5	30.9	12.5	-	11.4	10.5	10.3	9
Fry Canyon	Nev.	32	43N	54E	6800	3-5	30.8	10.7	-	10.5	9.2	9.7	9
Taylor Canyon	Nev.	32	39N	53E	5200	3-6	13.4	4.4	-	8.5	8.2	6.9	8
I N T E R I O R D R A I N A G E													
GUANO LAKE													
Bald Mountain	Nev.	17	45N	21E	6720	3-1	21.0	7.5	-	6.2	5.9	5.0	3
W E S T C O A S T D R A I N A G E													
KLAMATH LAKE BASIN													
Strawberry	837	4	40S	16E	5600	3-3	20.8	10.5	-	7.9	9.4	8.0	5



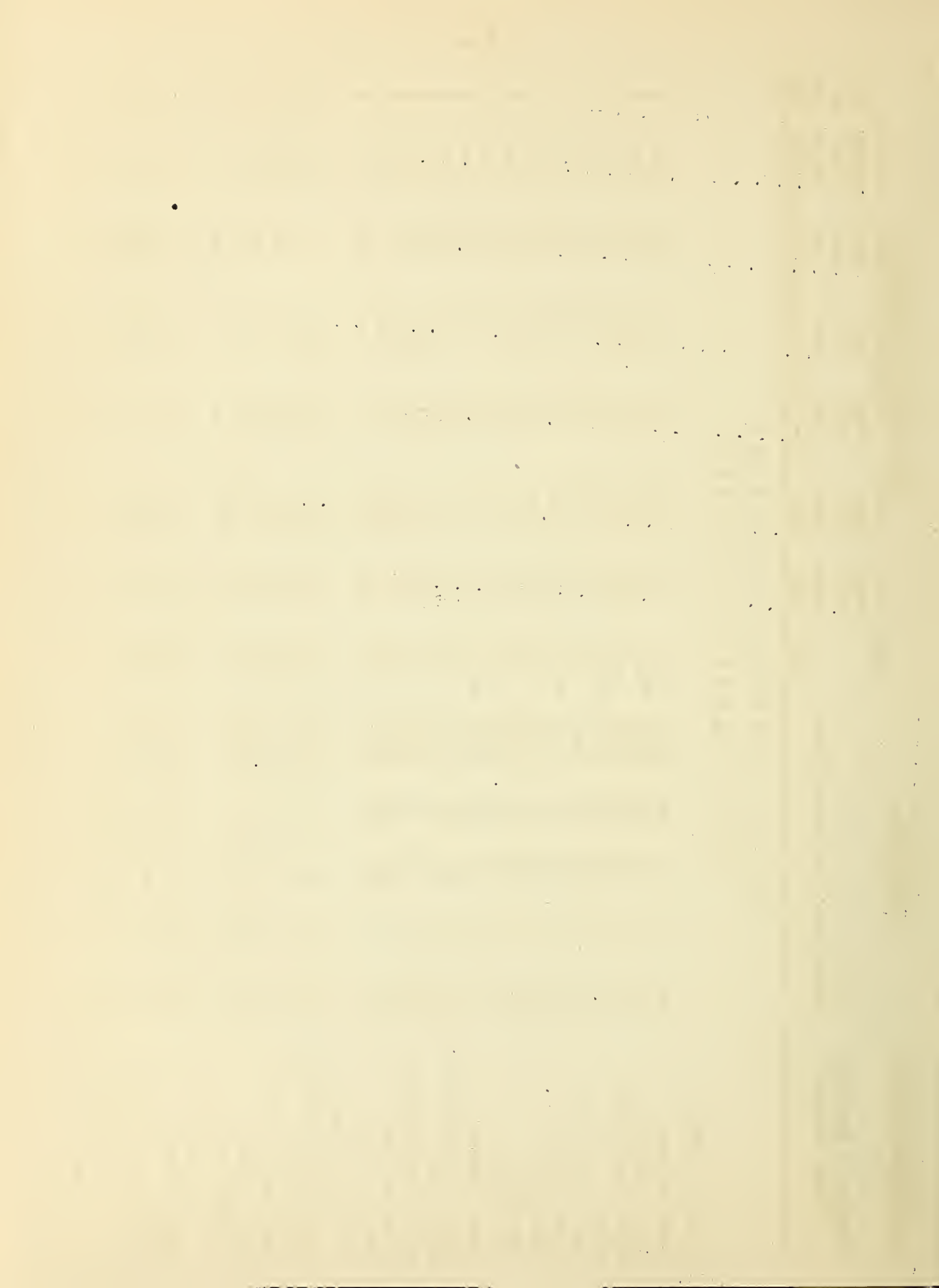
TRIBUTARY BASINS			LOCATION		SNOW COVER MEASUREMENTS										
(Primary & Secondary & Snow Courses)	Oregon Number	Sec. Twp. Range	Elev.	Date	About April 1, 1943		Average Water Depth (Inches)				Two Years Ago	Yrs. of rec- ord			
					Avg. Snow Depth (In.)	Avg. Water Depth (In.)	One Month Ago (3-1-43)	One Year Ago (4-1-42)	One Year Ago (4-1-41)						
OWYHEE RIVER															
Granite Peak	Nev.	27	44N 39E	8600	**4-1	44.8	19.1*	18.9	14.9	16.2	15.0	3			
Upper Buckskin	Nev.	14	45N 39E	8200	**4-1	35.8	15.6*	14.9	11.4	12.0	10.6	7			
Upper Jack Creek	Nev.	9	42N 53E	7800	4-1	24.5	9.4	12.2	11.0	8.2	9.6	2			
Midas	Nev.	18	39N 46E	7200	**4-1	0.8	0.2*	5.2	0.5	0.8	0.6	2			
Lower Jack Creek	Nev.	19	42N 53E	7000	4-1	0.0	0.0	3.3	4.3	0.0	3.9	3			
Martin Creek	Nev.	24	44N 39E	7000	**4-1	14.3	5.6*	9.9	8.9	6.6	7.8	2			
Rodeo Flat	Nev.	31	43N 54E	7000	4-2	26.1	10.6	12.5	9.6	9.1	9.4	2			
Big Bend	Nev.	30	45N 56E	6800	3-30	38.3	15.3	16.3	10.4	9.7	9.6	8			
Fry Canyon	Nev.	32	43N 54E	6800	4-2	23.6	8.7	10.7	9.0	8.8	8.9	2			
Lower Buckskin	Nev.	25	45N 39E	6800	**4-1	22.5	8.4*	9.4	7.0	5.9	6.4	2			
Gold Creek Ranger Sta.	Nev.	32	45N 56E	6600	3-30	24.0	8.9	10.9	7.6	6.0	6.5	3			
Silver City	Idaho	6	5S 3W	6400	4-1	33.7	14.3	15.7	11.2	4.6	10.7	7			
South Mountain No. 2	Idaho	35	7S 5W	6340	4-1	30.8	13.8	16.0	12.1	9.0	9.7	3			
Tremewan Ranch	Nev.	4	29N 55E	5600	3-30	0.0	0.0	2.3	0.5	-	0.5	1			
Taylor Canyon	Nev.	32	39N 53E	5200	4-1	0.0	0.0	4.4	6.4	4.6	5.5	2			
MALHEUR RIVER															
Blue Mountain Springs	133	21	15S 35E	5900	4-1	53.6	21.8	23.0	12.6	9.8	13.7	13			
Crane Prairie	137	24	16S 34E	5375	3-31	32.5	12.3	14.8	8.2	6.1	6.1	5			
Lake Creek	136	10	16S 33½E	5120	3-30	39.5	14.4	16.4	7.5	7.3	7.6	5			
Rock Spring	134	23	18S 32E	5100	4-1	16.3	4.3*	9.8	4.8	3.9	4.5	7			
Stinking Water	135	33	21S 34E	4800	3-30	0.0	0.0	4.4	5.3	0.0	1.3	5			
BURNT RIVER															
Dooley Mountain	156	32	11S 40E	5430	3-27	31.3	11.7	11.8	11.7	8.2	7.0	4			
Tipton	142	34	10S 35½E	5100	3-26	35.0	17.0	-	9.9	8.9	8.7	10			
Blue Mountain Summit	141	6	12S 36E	5098	3-26	35.9	12.2	13.4	9.0	2.8	5.7	8			

\* Telegraphic; subject to minor revision.

\*\* Date approximate.

\* Telegraphic; subject to minor revision.  
 \*\* Date approximate.







TRIBUTARY BASINS	LOCATION		SNOW COVER MEASUREMENTS										Yrs. of record
			About April 1, 1943	Average Water Depth			(Inches)			Two Years Ago			
(Primary & Secondary & Snow Courses)	Oregon Number	Sec. Twp. Range Elev.	Date	Avg. Snow Depth (In.)	Avg. Water Depth (In.)	One Month Ago (3-1-43)	One Year Ago (4-1-42)	Two Years Ago (4-1-41)	Avg. for past yrs. of record				

POWDER RIVER

Anthony Lake	155	18	7S	37E	7125	3-25	94.2	38.0	32.7	18.8	19.2	23.9	7
Summit Springs	184	9	6S	37E	6000	3-26	70.4	27.2	-	16.7	16.7	20.5	7
Bourne	154	33	8S	37E	5800	3-28	51.0	22.6	24.6	13.6	10.3	13.2	7
Taylor Green	185	3	6S	42E	5740	3-29	54.6	22.1	-	12.2	11.9	13.5	5
Dooley Mountain	156	32	11S	40E	5430	3-27	31.3	11.7	11.8	11.7	8.2	7.0	4
Filertson Meadows	151B	18	8S	38E	5400	3-28	38.8	14.7	17.8	10.9	8.5	11.1	5
Gold Center	249	21	9S	36E	5340	3-26	41.4	14.4	14.4	11.9	6.9	8.8	4

PINE CREEK

Schneider Meadows	161	35	6S	45E	5400	3-29	86.4	36.7	-	24.7	29.1	27.0	5
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GRANDE RONDE RIVER

Aneroid Lake	183	16	4S	45E	7480	3-27	101.7	43.1	-	33.6	28.4	33.9	9
Anthony Lake	155	18	7S	37E	7125	3-25	94.2	38.0	32.7	18.8	19.2	23.9	7
Aneroid Lake No. 2	183A	16	4S	45E	7000	3-27	76.3	32.8	-	27.1	-	27.1	1
Summit Springs	184	9	6S	37E	6000	3-26	70.4	27.2	-	16.7	16.7	20.5	7
Camp Carson	187	33	6S	36E	5970	3-26	42.2	18.6	-	9.6	5.7	7.2	5
Moss Spring	186	27	3S	41E	5860	3-27	87.0	34.6	32.1	18.6	16.7	22.7	5
Taylor Green	185	3	6S	42E	5740	3-29	54.6	22.1	-	12.2	11.9	13.5	5
Beaver Reservoir	188	8	5S	37E	5340	3-26	42.9	14.8	13.6	10.0	6.9	9.3	4
Meacham	221	24&25	1S	35E	4300	3-25	32.2	12.3	10.5	7.9	0.0	7.4	14

LOWER COLUMBIA DRAINAGE

WALLA WALLA RIVER

Tollgate	212	32	4N	38E	5070	3-26	81.4	34.6	31.9	18.4	12.1	24.5	12
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UNMATTILA RIVER

Tollgate	212	32	4N	38E	5070	3-26	81.4	34.6	31.9	18.4	12.1	24.5	12
Lucky Strike	223	28	3S	32E	5050	3-29	40.3	12.2	13.0	13.5	7.1	10.4	4



TRIBUTARY BASINS

LOCATION

(Primary & Secondary  
& Snow Courses)

Oregon  
Number

Sec. Twp. Range

Elev.

About April 1, 1943

Avg.

Snow

Depth

(In.)

Date

SNOW COVER MEASUREMENTS

Average Water Depth

One Month Ago

One Year Ago

Two Years Ago

(3-1-43) (4-1-42) (4-1-41)

(Inches)

Avg. for

past

years of

rec-

ord

UMATILLA RIVER (Cont'd.)

Meacham 221 24&25 1S 35E 4300 3-25 32.2 12.3 10.5 7.9 0.0 7.4 14  
Emigrant Springs 222 29 1N 35E 3925 3-25 11.3 4.8 6.3 5.5 0.0 5.0 14

WILLOW CREEK

Arbuckle Mountain 241 33 4S 29E 5400 4-1 26.3 9.0 10.6 12.2 2.8 9.6 14

JOHN DAY RIVER

Dixie Springs 244 28 11S 34E 6650 3-27 71.8 29.0 18.4 17.2 22.0 7  
Olive Lake 245 14 9S 33½E 6000 3-28 59.8 21.6 15.0 14.4 16.6 7  
Blue Mountain Springs 133 21 15S 35E 5900 4-1 53.6 21.8 23.0 12.6 9.8 13.7 13  
Arbuckle Mountain 241 33 4S 29E 5400 4-1 26.3 9.0 10.6 12.2 2.8 9.6 14  
Gold Center 249 21 9S 36E 5340 3-26 41.4 14.4 11.9 6.9 8.8 4  
Izee Summit 964 28 16S 29E 5293 3-31 28.1 10.6 12.8 6.3 3.1 6.0 7  
Starr Ridge 247B 20 15S 31E 5150 3-31 21.2 8.4 9.5 3.2 1.1 2.8 7  
Blue Mountain Summit 141 6 12S 36E 5098 3-26 35.9 12.2 13.4 9.0 2.8 5.7 8  
Beech Creek Summit 246A 4 12S 30E 4800 3-29 17.0 6.0 8.5 6.0 Trace 4.6 6

DESCHUTES RIVER

New Dutchman 324A 21 18S 9E 6400 Measurement Delayed 39.4 32.7 47.4 9  
Charlton Lake 327 23 21S 6E 5750 3-31 103.6 40.7 19.5 13.0 23.5 6  
Derr 343 14 13S 23E 5670 3-29 32.4 11.3 10.9 5.7 9.6 6  
Three Creeks Meadows 331 3 17S 9E 5600 4-2 79.8 28.7 11.8 7.5 18.3 14  
Ochoco Meadows 341 21 13S 20E 5200 3-31 36.4 13.1 14.8 4.6 8.7 13  
Cascade Summit 321 7 23S 6½E 4880 3-30 92.3 39.4 19.7 11.4 27.6 13  
Tamarack 342 8 15S 25E 4800 3-31 18.3 4.9 5.4 1.3 3.4 6  
Crescent Lake 325 11 24S 6E 4760 3-30 0.5 Trace 0.0 0.0 8.2 8  
Hogg Pass 351 24 13S 7½E 4755 3-31 149.6 53.8 52.7 18.6 32.0 5  
Marks Creek 344 25 12S 19E 4540 3-29 13.0 5.3 9.6 4.4 2.6 5  
Caldwell Ranch 326 30 21S 8E 4400 3-31 34.5 13.8 3.9 3.9 6.3 6  
Clear Lake 361 29 4S 9E 3500 3-29 51.6 22.2 7.9 0.2 12.3 11



# TRIBUTARY BASINS

## LOCATION

## SNOW COVER MEASUREMENTS

(Primary & Secondary & Snow Courses)	Oregon Number	Sec.	Twp.	Range	Elev.	About April 1, 1943		Average Water Depth (Inches)					Yrs. past of rec- ord
						Date	Avg. Snow Depth (In.)	Avg. Water Depth (In.)	One Month Ago (3-1-43)	One Year Ago (4-1-42)	Two Years Ago (4-1-41)		
HOOD RIVER													
Brooks Meadows	431	2	2S	10E	4300	3-25	47.4	21.4	-	11.2	1.1	7.5	10
SANDY RIVER													
Phlox Point - Mt. Hood	452	6	3S	9E	5600	3-24	178.6	81.2	74.5	43.0	20.2	49.1	6
Still Creek	451	25	3S	8½E	3700	3-24	89.2	38.3	35.5	13.5	0.0	14.4	6
Clear Lake	361	29	4S	9E	3500	3-29	51.6	22.2	-	7.9	0.2	12.3	11
CLACKAMAS RIVER													
Peavine Ridge	591	14&15	6S	7E	3500	4-1	79.3	35.5	28.2	9.3	0.0	14.1	6
Clackamas Lake	592	35	5S	8½E	3400	No report			25.3	6.2	0.0	7.3	5
WILLAMETTE RIVER													
Charlton Lake	327	23	21S	6E	5750	3-31	103.6	40.7	-	19.5	13.0	23.5	6
Waldo Lake	521A	15	21S	6E	5500	3-30	97.5	39.2	-	18.1	7.8	20.2	5
Cascade Summit	321	7	23S	6½E	4880	3-30	92.3	39.4	-	19.7	11.4	27.6	13
McKenzie	531	35	15S	7½E	4800	3-28	109.1	50.6	-	22.4	14.8	24.8	4
Hogg Pass	351	24	13S	7½E	4755	3-31	149.6	53.8	52.7	32.6	18.6	32.0	5
Champion	522	12	23S	1E	4500	4-2	74.7	33.1	30.2	13.3	0.0	14.9	4
Santiam Junction	552	14	13S	7E	3990	4-4	70.8	33.2	32.4	14.7	0.0	7.4	2
Mary's Peak	541	21	12S	7W	3620	3-30	21.5	3.8	-	4.2	0.0	4.8	4
Marion Forks	553	28	11S	7E	2730	4-4	46.8	20.6	23.6	4.5	0.0	2.2	2

## INTERIOR DRAINAGE

## SILVER LAKE

Silver Creek	942	25&26	29S	13E	4900	3-29	7.7	3.3	7.8	-	0.0	0.0	2
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## TRIBUTARY BASINS

## LOCATION

## SNOW COVER MEASUREMENTS

	Oregon Number	(Primary & Secondary & Snow Courses)	Date	Avg. Snow Depth	About April 1, 1943	Average Water Depth	Yrs.
				(In.)		One Month Ago	
				(In.)		One Year Ago	
				(In.)		Two Years Ago	
				(In.)			past yrs.of record
						(3-1-43)(4-1-42)(4-1-41)	

# CHETAU CAN RIVER

[illegible]

## HARNEY BASIN

Location	Year	33S	33E	7900	3-29	78.7	34.1	-	21.8	21.7	22.1
Fish Creek	952	4	33S	33E	7900	3-29	78.7	34.1	-	21.8	22.1
Silvies	951	35	32S	33E	6900	3-29	34.1	12.3	-	14.6	13.5
Deer Creek	973	17	36S	26E	6670	3-30	16.2	6.4	8.2	10.5	7.9
Hart Mountain	971	1	36S	25E	6350	3-30	2.5	1.3	4.3	8.0	2.2
Izee Summit	964	28	16S	29E	5293	3-31	28.1	10.6	12.8	6.3	6.0
Idylwild Camp	961A	33	20S	31E	5200	4-1	14.4	4.4*	8.5	4.0	2.6
Starr Ridge	247B	20	15S	31E	5150	3-31	21.2	8.4	9.5	3.2	2.8
Rock Spring	134	23	18S	32E	5100	4-1	16.3	4.3*	9.8	4.8	4.5

GUANO LAKE

Bald Mountain	Nev.	17	45N	21E	6720	4-1	11.2	4.3	7.5	4.5	3.8	3.1
Guano Creek	972	13	36S	25E	6480	3-30	12.7	4.9	7.7	12.8	5.7	7.0

# WARNER LAKE

Camas Creek	5	39S	21E	5720	3-29	31.8	13.5	-	10.6	8.1	7.2	4
911A	5	39S	21E	5720	3-29	31.8	13.5	-	10.6	8.1	7.2	4

UMPOUA RIVER

WEST COAST DRAINAGE

Location	Year	Sex	Age	Weight (kg)	Length (cm)	Blubber (mm)	Stomach Content	Notes
Diamond Lake	743	29	27S	6E	5315	3-30	69.3	31.3
	7217	3	31S	2E	5140	3-26	85.8	39.3
Whaleback	522	12	23S	1E	4500	4-2	74.7	33.1
	742	19	26S	6E	4215	Being Measured		
No.Umpqua nr.Lake Creek	741	1	27S	4E	3800	Being Measured		
	7215	30	32S	3W	3730	3-28	1.5	0.6
Goolaway Mountain	726	32	32S	3W	3000	3-28	0.0	0.0

\* Telegraphic; subject to minor revision.





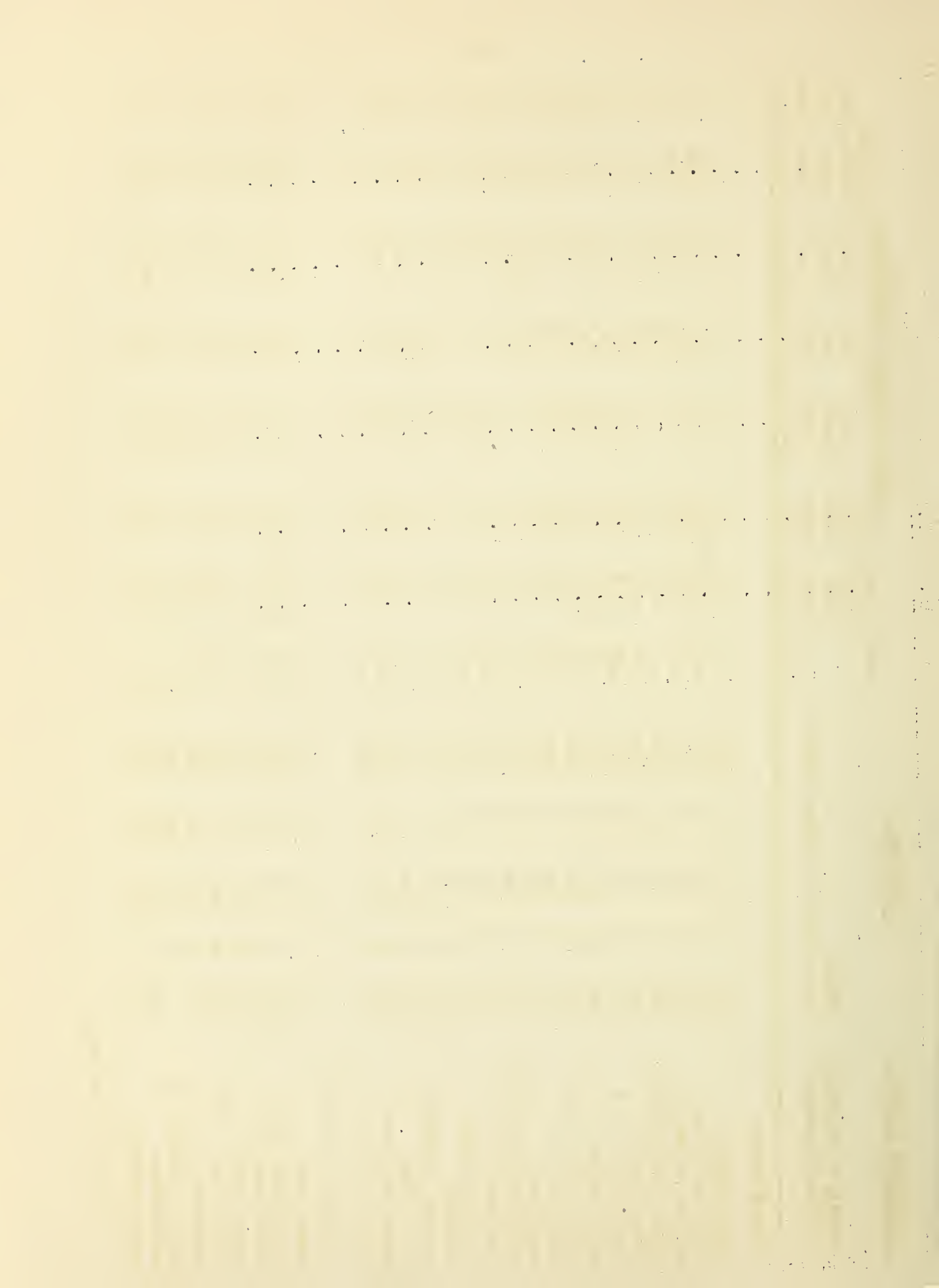
TRIBUTARY BASINS

LOCATION

SNOW COVER MEASUREMENTS

(Primary & Secondary & Snow Courses)	Oregon Number	Sec.	Twp.	Range	Elev.	About April 1, 1943					Average Water Depth			Yrs. of rec- ord	
						Date	Snow Depth (In.)	Avg. Water Depth (In.)	One Month Ago (3-1-43)	One Year Ago (4-1-42)	Two Years Ago (4-1-41)	(Inches) Avg. for past yrs. of record			
ROGUE RIVER															
Wagner Butte	7213	1	40S	1W	6900	4-3	27.7	10.1	14.7	15.8	12.4	17.7	8		
Seven Lakes No. 1	7211	3	34S	5E	6800	3-30	178.6	**76.6	46.7	37.3	40.7	55.7	7		
Big Red Mountain	729	31	40S	1W	6500	4-2	53.4	23.2	-	28.7	34.6	32.4	7		
Little Red Mountain	7210	25	40S	2W	6500	4-2	30.4	13.3	-	21.8	20.2	24.5	7		
Scragg Mountain	7220	9	47N	10W	6200	3-28	42.7	21.2	27.0	20.1	21.8	21.0	2		
Seven Lakes No. 2	7212	26	33S	5E	6200	3-28	111.9	48.6	43.3	28.7	32.4	41.9	7		
Annie Spring	831	19	31S	6E	6018	3-30	115.4	49.9	46.3	31.9	39.1	41.6	10		
Billie Creek Divide	722	30	36S	5E	6000	3-30	58.6	31.3	31.9	19.3	6.7	21.4	12		
Grayback Peak	727	9	40S	5W	6000	3-31	45.8	18.6	23.8	19.8	25.2	29.1	7		
Whaleback	7217	3	31S	2E	5140	3-26	85.8	39.3	-	25.8	20.8	32.0	6		
Hyatt Prairie Reservoir	723	15	39S	3E	4900	4-4	6.6	2.7	10.9	8.6	Trace	8.6	10		
Fish Lake	725	3	37S	4E	4865	3-31	29.0	9.6	15.3	8.7	0.0	13.2	9		
Siskiyou Summit	728	17	40S	2E	4630	3-28	3.1	1.0	8.6	-	0.0	4.3	7		
Althouse	7216	17	41S	7W	4400	4-1	2.0	0.4	1.1	2.4	0.0	9.8	6		
Goolaway Mountain	7215	30	32S	3W	3730	3-28	1.5	0.6	3.8	Trace	0.0	7.1	6		
Silver Burn	7219	30	30S	4E	3720	3-31	26.2	9.6	15.6	3.8	0.0	9.2	6		
South Fork Canal	7218	12	33S	3E	3500	4-1	0.0	0.0	4.2	0.0	0.0	1.2	6		
Goolaway Gap	726	32	32S	3W	3000	3-28	0.0	0.0	0.2	0.0	0.0	2.3	7		
KLAMATH LAKE BASIN															
Summer Rim	841	15	33S	16E	7200	3-29	52.7	20.9	20.7	11.9	12.4	14.9	6		
Seven Lakes No. 1	7211	3	34S	5E	6800	3-30	178.6	**76.6	46.7	37.3	40.7	55.7	7		
Seven Lakes No. 2	7212	26	33S	5E	6200	3-28	111.9	48.6	43.3	28.7	32.4	41.9	7		
Annie Spring	831	19	31S	6E	6018	3-30	115.4	49.9	46.3	31.9	39.1	41.6	10		
Billie Creek Divide	722	30	36S	5E	6000	3-30	58.6	31.3	31.9	19.3	6.7	21.4	12		
Strawberry	837	4	40S	16E	5600	3-31	6.2	2.4	10.5	5.6	1.7	2.8	4		
Quartz Mountain 2/		33	37S	16E	5504	4-3	12.0	5.5	10.0	4.0	0.0	4.0	12		
Sun Mountain	836	22	32S	7½E	5350	4-1	84.5	37.6	37.9	21.6	24.9	26.3	6		
Quartz Mountain	811	2	38S	16E	5320	4-3	0.0	0.0	8.1	0.0	0.0	3.7	12		

\*\* Partly estimated.



TRIBUTARY BASINS

LOCATION

(Primary & Secondary  
& Snow Courses)

Oregon  
Number Sec. Twp. Range Elev.

SNOW COVER MEASUREMENTS

About April 1, 1943  
Avg. Snow Depth (In.)  
Avg. Water Depth (In.)  
One Month Ago (3-1-43)  
One Year Ago (4-1-42)  
Two Years Ago (4-1-41)  
Average Water Depth (Inches)  
Yrs. past of rec-  
ord

KLAMATH LAKE BASIN (Cont'd.)

Crowder Flat (Calif.)	30	47N	11E	5200	3-29	0.0	0.0	8.9	0.0	0.0	0.0	0.0	4
Taylor Butte	842	16	33S	5100	3-31	6.5	2.4	-	4.1	0.0	0.0	3.4	6
Lake of the Woods No.1	835	11	37S	4960	3-31	33.3	12.0	13.8	7.0	2.2	8.6	6	
Hyatt Prairie Reservoir	723	15	39S	4900	4-4	6.6	2.7	10.9	8.6	Trace	8.6	10	
Richardson Ranch 2/		22	35S	4800	3-31	0.0	0.0	2.8	0.0	0.0	0.0	16	
Chemult No. 1	834	21	27S	4760	4-1	38.4	15.2	21.4	6.5	Trace	6.4	6	
Yamsey 2/		7	31S	4600	3-31	0.0	0.0	7.6	0.0	0.0	0.6	12	
Kirk 2/		1	33S	4533	3-31	0.0	0.0	9.1	0.0	0.0	1.9	13	
Beatty 2/		22	36S	4300	3-31	0.0	0.0	0.2	0.0	0.0	0.0	16	
Crystal 2/		26	34S	4200	3-31	9.0	4.0	10.6	1.8	0.0	4.6	13	
Pelican 2/		10	36S	4200	3-31	0.0	0.0	9.0	0.0	0.0	1.0	15	
Chiloquin 2/		34	34S	4187	3-31	0.0	0.0	3.8	0.0	0.0	0.2	15	
Fort Klamath 2/		22	33S	4150	3-31	0.0	0.0	6.0	0.0	0.0	1.2	16	

GOOSE LAKE BASIN

Camas Creek	911A	5	39S	21E	5720	3-29	31.8	13.5	-	10.6	8.1	7.2	4
Strawberry	837	4	40S	16E	5600	3-31	6.2	2.4	10.5	5.6	1.7	2.8	4
Quartz Mountain 2/		33	37S	16E	5504	4-3	12.0	5.5	10.0	4.0	0.0	4.0	12
Quartz Mountain	811	2	38S	16E	5320	4-3	0.0	0.0	8.1	0.0	0.0	3.7	12





## IRRIGATION WATER SUPPLY FORECASTS

### SEASON OF 1943

#### - Foreword -

Measurements of snow water content were secured on nearly all Oregon snow courses between March 24 and April 4. It was not possible to secure customary watershed soil moisture determinations during the latter part of March.

The usual water forecast committee meetings were held in important irrigated regions of the State during the period April 1 to 9 as follow: The Dalles for Northcentral Oregon; Pendleton for the Umatilla-Walla Walla Basin; LaGrande for Northeastern Oregon; Vale for Eastern Oregon (Section I); Burns for Eastern Oregon (Section II); Redmond for Central Oregon; Lakeview for Southeastern Oregon; and Medford for Southern Oregon. Most of the cooperating agencies were represented at these discussions.

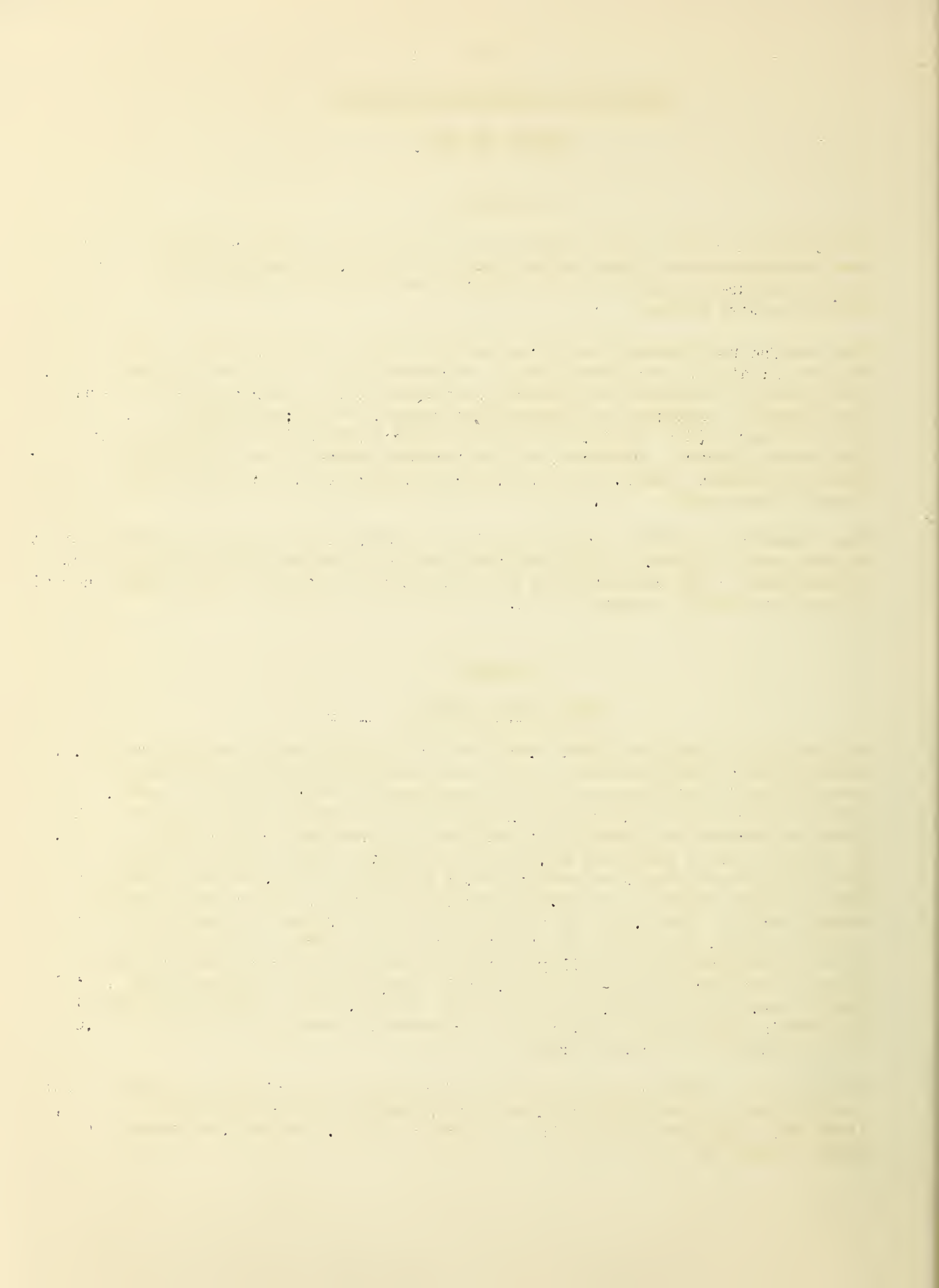
Each committee's report, outlining the irrigation water supply prospect in each area, follows. Later modifications of forecasts may be required in accordance with precipitation and temperature deviations from normal during the run-off season.

#### Forecasts

##### Northcentral Oregon

Watershed snow supplies, both above and below 5,000 feet elevation, very greatly exceed those measured at the same period in either of the two immediately preceding years and are approximately twice average. Snow-stored water at Phlox Point on Mt. Hood is the greatest measured there since the course was established and first measured on April 5, 1937. In only one year, 1933, has greater water content been measured on Clear Lake Snow Course since its establishment in 1929. Watershed soil moisture is above average. Reservoirs are full or can be filled before withdrawal occurs. Prospects, therefore, are for an unusually abundant water supply, and for more water than in any year since 1933. Flow of White River below Tygh Valley, entirely used for power generation, for the low flow period July-September, inclusive, is expected to be approximately 34,000 acre feet, or 122 per cent normal. For the flow period April-June, inclusive, White River is expected to discharge approximately 161,000 acre feet, or 136 per cent normal.

Stream flow reduction to the point where regulation is required is not expected until about July 25-August 5, as compared with about July 5, 1942, and about June 18 of the year before. In 1933, regulation began about August 15.





Crop land soil moisture penetration is uniformly greater than in either 1941 or 1942 through Wasco County, and in all types of cultivated land, moisture has penetrated to or below 6 feet depth below the surface where sampled. Crop land soil moisture in Sherman County wheat lands is about the same as last year and has penetrated to a greater depth than in 1939, 1940 or 1941. The shallower wheat lands remain extremely wet.

Reservoirs supplying the Oak Grove section near Hood River are practically full and would fill if less water were in storage than is being now held. The outlook is for adequate irrigation supply to Hood River valley.

### Umatilla-Walla Walla Basin

Early winter precipitation was above normal throughout the area. Resulting winter streamflow has been considerably above normal and both watershed and valley crop land soils are well wetted. Mountain snow cover is above average at high elevations but only average or slightly less than average at lower elevations. Low level snow cover decreased during March but high level snow increased in total water content during this period.

Adequate water supply is anticipated for irrigated lands along the Umatilla River with good prospects for a substantial "hold-over" (30,000 acre feet, more or less) in McKay Reservoir at the conclusion of the current irrigation season. McKay Reservoir has now in storage 64,280 acre feet and is wasting water to provide space for McKay Creek inflow to come, estimated as 30,000 acre feet or less. Flow of Willow Creek is expected to be better than average and to provide an adequate 1943 irrigation water supply. Cold Springs Reservoir is full and the feed canal is supplying water for irrigation now underway in the Hermiston area. Approximately one-half the flow of Butter Creek has been wasted this season to date, due partly to shortage of farm help. Flow of this stream for the period April 1-September 30 is expected to be less than average and the supply is expected to be short.

Soil moisture conditions in wheat lands near Pendleton are favorable to dry land production. Soil moisture penetration in sage brush land near Hermiston is now 60 inches, compared to 41 inches in 1942, 46 inches in 1941, 42 inches in 1940 and 36 inches in 1939. Moisture penetration in Sherman County wheat lands is uniformly greater than in 1942.

Backward growing conditions have retarded spring range and greater than usual re-seeding of winter sown wheat and pea acreage is due to considerable acreage of these crops being lost by heavy soil freezing and heaving. So far as soil moisture conditions alone are concerned, prospects for forest range are promising.

Tabulated stream flow forecasts follow:

Stream	Run-off Obtained in Acre Feet		Forecasted Run-off in Acre Feet	
	Stream Yr. 1941-42	Six Months Apr.1-Sept.30	Stream Yr. 1942-43	Six Months Apr.1-Sept.30
South Walla Walla R.	106,590	51,540	129,550	70,000
Umatilla R. at Gibbon	-	-	193,000	91,000
Umatilla R. at Pendleton	395,977	180,859	462,000	180,000
McKay Creek	113,269	42,899	98,980	30,000
Butter Creek	31,922	12,892	23,917	5,400

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Northeastern Oregon

There is every reason to believe that all major and minor streams in this area will discharge above-normal volume during the ensuing six months.

Mountain snow cover is much above average, watershed soils are wet, and snow is "riper" than usual. These combined conditions under influence of warm rains or high temperatures will tend to produce stream flow of flood proportions in the Baker, Grande Ronde and Burnt River valleys. It would, therefore, be expedient to make immediate preparations in anticipation of such possible high flow stages. Cool weather continued through April and May would help to reduce the spring flow peak.

Water supplies to Pine Creek and Eagle Creek valleys should be better than last year and the best since 1938.

Wallowa Lake has now in storage 26,000 acre feet and will readily fill. It is expected that some water will be by-passed prior to beginning of the 1943 irrigation season. A greater hold-over should remain in this reservoir at the conclusion of this irrigation season than was the case last year. In general, the outlook in Wallowa County is for the most plentiful irrigation supply since 1938.

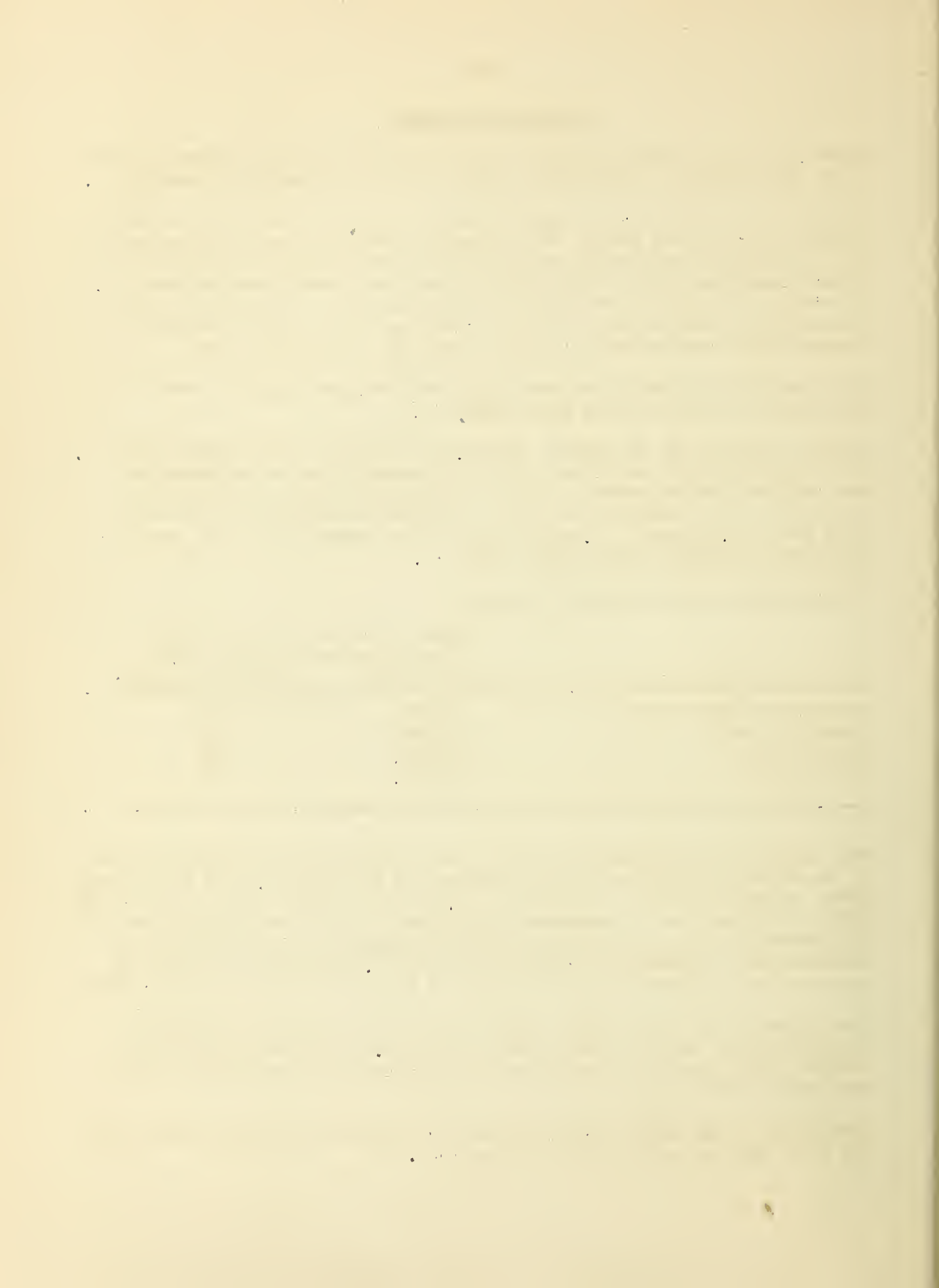
Tabulated stream flow forecasts follow:

Stream	Estimated Stream Flow for Period April-September, incl., 1943	
	Acre Feet	Per Cent Average
East Fork Wallowa River	12,000	124
Hurricane Creek	50,000	131
Lostine River	140,000	132
Bear Creek	65,000	118

The outlook for mid-summer and late season water supplies to lands served by the Grande Ronde River and its tributaries is good. Flow of the Grande Ronde at Station 1816 near LaGrande, for the six months ending September 30, 1943, is expected to be approximately 200,000 acre feet or 115 per cent of the 1904-40 average. Late summer flow for July-September, inclusive, is expected to be approximately 7500 acre feet. Flow of Catherine Creek is expected to be similarly above average and may be the greatest since 1933.

Farm lands in the Grande Ronde valley are very wet and soil moisture is reported as the greatest for several years. Some flooding already has occurred with approximately 750 acres in the southerly end of the valley now covered with water.

Farm lands in the Baker valley are less wet than in the Grande Ronde valley and farm work is somewhat more advanced.





Snow stored water on the main Powder River drainage decreased slightly during March, whereas on the Powder North Fork, at higher elevations, snow cover continued to increase to April 1. Snow cover on both watersheds is now substantially above normal with practically no run-off to date from the higher levels. The April-September run-off, both of main Powder and North Powder is expected to be the greatest since 1933. Low flow of both streams should be better than average.

Thief Valley Reservoir is full and will not be useful in reducing spring peak flow of Powder River.

Unity Reservoir on Burnt River, on the other hand, is full to less than one-half capacity and a large volume of water has been passed through this reservoir during this past winter, in order to reserve storage space for the very large inflow which seems sure to come from the well wetted watershed and above-normal snow pack existing at the headwaters of Burnt River. Snow records on the watershed of this stream extend back only to 1929, but 1943 spring run-off is expected to exceed anything experienced since at least 1929. Unity Reservoir should retain a substantial "hold-over" supply at the conclusion of the 1943 irrigation season.

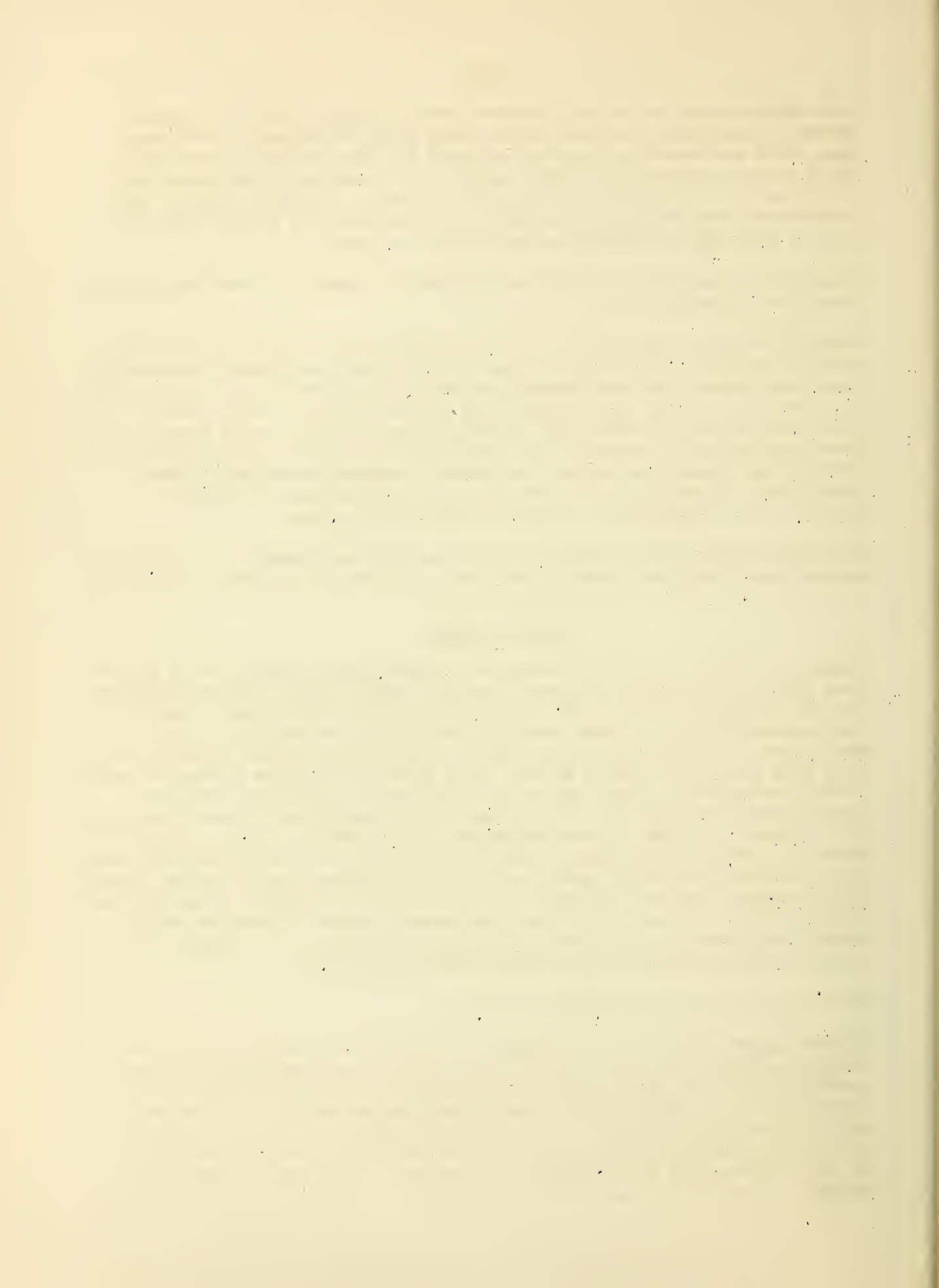
Throughout Northeastern Oregon backward growing conditions have retarded spring range but some "turning out" has been forced by shortage of feed.

#### Eastern Oregon

Owyhee Reservoir has now in storage more than 618,000 acre feet, a little less than at this date last year, but will readily fill, thus providing a two year irrigation supply for lands served from this source. There is some uncertainty as to exact magnitude of spring run-off yet to occur, so the reservoir will be held at about the present level until April 15 and will then be filled. Total Owyhee River discharge for the streamflow year ending September 30, 1943, is set at 1,210,000 to 1,335,000 acre feet, approximately 145-160 per cent average. Flow remaining to come from April 1 to September 30, 1943, is set at 600,000 to 725,000 acre feet. Farmers under the Owyhee Ditch Company project will again be able to satisfy their 1943 season's irrigation needs from the river without depending too greatly upon reserves from the reservoir. Crop land soil moisture in the Malheur County irrigated area is good and the growing season is somewhat behind normal; nevertheless, irrigation demands are expected in the immediate future, particularly for newly seeded sugar beet seed.

Antelope Reservoir is expected to fill.

Neither Agency Valley nor Warm Springs reservoirs are full, although the latter reservoir is very nearly full and will be of less help in reducing possible peak flow stages on the Malheur Middle Fork than Agency Valley Reservoir will be on the North Fork. Both reservoirs are expected to fill and a substantial hold-over in each is anticipated at the conclusion of the 1943 irrigation season. Flow of both the Middle Fork and North Fork of the Malheur will be very much above average during the ensuing six months. This will be due in part to heavy snow supplies remaining in the





mountains and in part to high watershed soil moisture due in turn to heavy fall and winter rains. Progressive sub-surface moisture restoration is also indicated by above-normal run-off during the preceding two years.

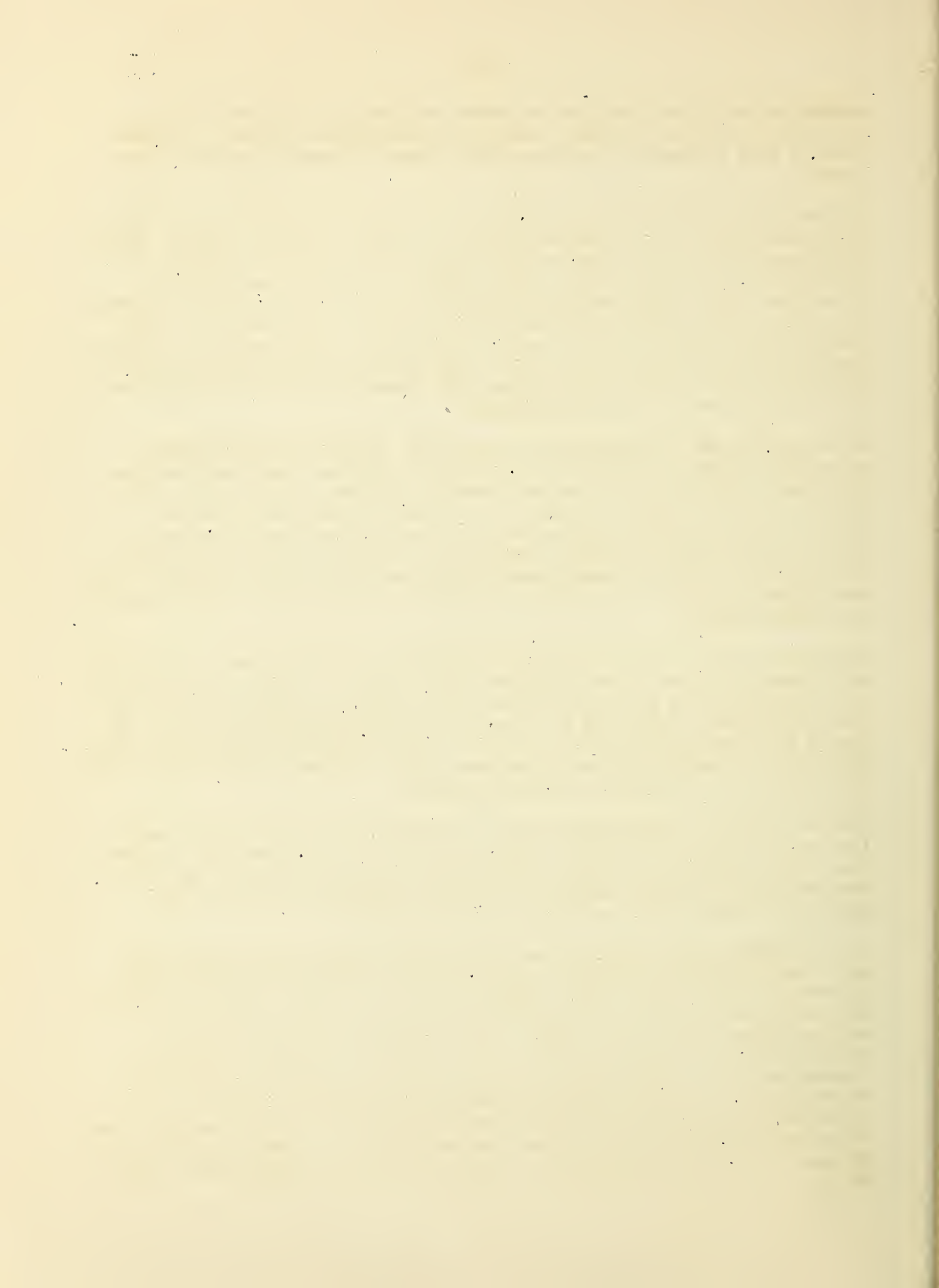
Malheur River North Fork is expected to discharge approximately 100,000 acre feet during the six months, April-September, inclusive, 1943. This would equal 184 per cent average. It should be pointed out that the average is based on but seven record years of which the majority were short flow years. Last year's discharge for this same period was 73,000 acre feet. Malheur River Middle Fork is expected to discharge approximately 130,000 acre feet during the six months, April-September, inclusive, 1943. If obtained, this will equal 219 per cent average and will exceed the flow of 1938 slightly and will exceed by nearly one-third the flow of last year for the same period.

Snow supplies on the headwaters of the Main Fork of John Day River, below 6,000 feet, have decreased slightly during the past month, and at relatively low levels only patches remain. However, remaining supplies, especially at the higher levels, exceed those of last year, the year before, or the record period average, and on most courses are greater than in either 1936 or 1938. Furthermore, watershed soils are very wet and maximum delivery of water from melting snow is thereby favored. Such conditions, if augmented by high temperatures or warm rains, will produce early peak flows.

Strawberry Creek, one of the upper tributaries of this stream, considered an indicator to flow of the John Day Main Fork, is expected to discharge approximately 9,600 acre feet during the six months ending September 30, 1943. This would equal 144 per cent of the 1931-1942 average and is expected to be the greatest of the record period with the exception of 1938 when the six months' flow was 9,660 acre feet. It would exceed last years' flow for the same period by about one-third.

The snow cover on watersheds supplying Harney Basin has shown some melting during March but remaining supplies on most snow courses are greater than at a comparable date either last year, or the year before and exceed average by considerable margin. At higher elevations remaining snow materially exceeds that present on April 1, 1938.

It is estimated that Silvies River will discharge approximately 220,000 acre feet during the streamflow year October 1, 1942-September 30, 1943. If obtained, this will be the greatest annual flow since 1920-21 when the discharge was 236,000 acre feet. Remaining to be discharged in the six months ending September 30, 1943, is an estimated 130,000 acre feet, equivalent to 380 per cent of the six year average 1936-41, inclusive. Present peak flow of approximately 2200 c.f.s. is expected to gradually decrease with peak flow conditions probably concluded by April 20, or later, depending much upon weather conditions in the next two weeks. Considerable low snow remains to move out and hardly more than one-sixth, by volume, of the high elevation snow has been melted and discharged during March.



Prospects are for as good a low flow as in any recent year and better than average. Water from Silvies River has been reaching Malheur Lake all winter and during the current flow peak a greater than usual area of low land near Burns has been flooded. Flood conditions in the upper valley have not been helped any by the debris and brush-filled channels which prevent rapid passage of peak flow to the lower valley.

Silver Creek has been running through to Harney Lake since February 20. Both total flow and low flow of this stream are expected to compare similarly to past records as Silvies River. Discharge for the stream flow year is expected to approximate 80,000 acre feet.

Malheur Lake is full and Harney Lake is rapidly filling. There is good prospect that Harney Lake will fill this year for the first time since 1910.

Stream discharge into Catlow Valley has passed its peak, according to the snow records, and is not likely to amount to much from now on. Prospects for better sustained flow than usual are seen for Home Creek, Skull Creek and other small tributaries here.

Peak flow of the Blitzen River is believed yet to come and it is expected to have a greater than average discharge for the six months ending September 30.

Trout Creek summer flow is expected to be better than usual.

#### Central Oregon

Ochoco Reservoir is full and spilling water for the first time since 1938. Approximately 42,500 acre feet of water have been wasted from this reservoir between January 5 and April 6, in anticipation of heavy spring inflow. In a report to the Ochoco Irrigation District, dated February 19, 1943, certain flow forecasts for the 1943 season were advanced to aid the District in preparing for heavy inflow to come. Some of these were as follows:

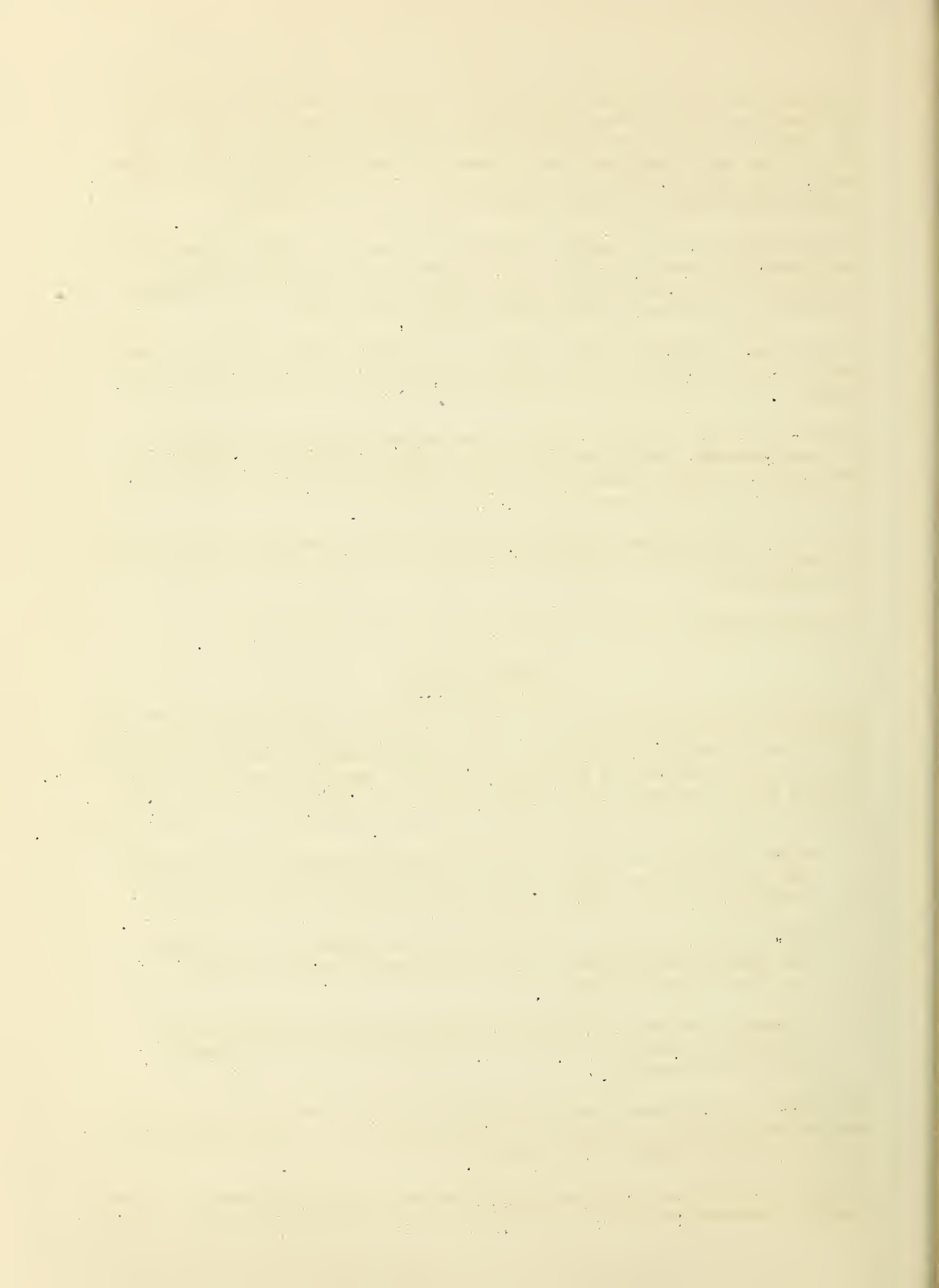
"1943 promises the greatest water supply to Ochoco District lands of any year since 1921. Substantial reservoir hold-over at the conclusion of the 1943 irrigation season seems safe to assume.

"If reservoir storage is not reduced from 35,400 acre feet now in storage, and no more water be by-passed, heavy reservoir spillage seems certain.

"Probable reservoir inflow (including reservoir losses) April-September, inclusive, 1943 -- 26-30,000 acre feet or 180-207 per cent average."

The total April-September water supply from this source (including water now in storage) is likely to be 73-77,000 acre feet or about 244 per cent average (average based on 23 years).

Valley crop land soil moisture conditions are better than usual. Irrigation is expected to begin about April 15 in the Prineville area.





Ochoco Forest range prospects are very good but the season is somewhat late.

Numerous ranchers irrigating from Beaver and Rager creeks and other small tributaries on upper Crooked River have expressed concern over possible shortages of irrigation water there in 1943. Their concern seems based on the relatively small amount of snow-stored water remaining on Tamarack Snow Course and to snow-barren south slopes. The unusually heavy spring flood discharge of Crooked River has created the impression that early snow melt has dissipated water supplies that usually would remain to a later date in snow storage. In view of the heavy run-off and well sustained low flow predicted for Ochoco Creek to the northwest and on Silver Creek and Silvies River immediately east of this area, and in further view of the very heavy snow supplies remaining at Izee Summit, and above-average snow supply now on or near Wolf Mountain at higher elevations, as indicated by the latest snow survey at Derr and the January last snow measurement at Tamarack, it is considered extremely unlikely that summer flow of Beaver and Rager creeks will be less than normal.

The outlook for mid-summer and late water supplies to lands irrigated from the upper Deschutes River is far more favorable than last year at this date and the outlook generally is the best since 1938 in the most southerly part of the area and the best since 1933 in the remainder of the area.

Odell Creek should discharge approximately 32,000 acre feet to Davis Lake during the six months ending September 30. This would equal 140 per cent average (9 years only) and will be the greatest since 1933.

Inflow to Crescent Lake for the six months, April-September, inclusive, is expected to be approximately 15,000 acre feet or 147 per cent average (13 years) and the greatest since 1938 when it slightly exceeded the amount forecast for 1943. Crescent Lake has now in storage 34,810 acre feet and should peak this year in storage at approximately 50,000 acre feet, or 62 per cent capacity. The available water from this source will, therefore, be greater than in any of the three years 1942, 1941, or 1940. Hold-over storage in this reservoir is expected at the conclusion of the current irrigation season.

Natural flow of Tumalo Creek (Tumalo Creek plus Columbia Southern Canal) for the six months ending September 30, 1943, should equal approximately 56,000 acre feet, equivalent to 130 per cent average, and late summer flow should be similarly better than average. Probable discharge is expected to be greatest since 1933.

Flow of Squaw Creek at Station 335 for the six months ending September 30, 1943, is expected to be approximately 60,000 acre feet or 118 per cent average (30 years). Flow is expected to be the greatest since 1933.

The Squaw Creek Canal is expected to receive a full supply through the entire season and it appears the Plainview and McAllister ditches can expect to receive water until about July 10.





Crane Prairie Reservoir is expected to increase from present storage of 40,444 acre feet to at least 44,000 acre feet. Flow of the Little Deschutes River is expected to approximate that of 1938 and it is believed the C.O.I. District may not need to draw on storage supplies until about July 1, particularly as the six months' flow, April-September, inclusive, 1943, of the upper Main Deschutes is estimated as 170 per cent of last year. Some storage from Wickiup Reservoir will be available to the C.O.I. for this season and prospects are for completely adequate late water supplies not only to the lands under the C.O.I. but for lands under the Arnold and Lone Pine canals as well.

The Swalley Canal will have 100 per cent water supply.

#### Southeastern Oregon

Another good water year for Lake County irrigation farmers is in prospect, fully as good as last year, and better than average. Full reservoirs, good summer stream flow and plenty of soil moisture for range grass are in prospect throughout the area.

Snow-stored water is so abundant that water storage in Cottonwood Reservoir has not yet started. Storage will begin within a day or so and this reservoir will be filled to the agreement capacity.

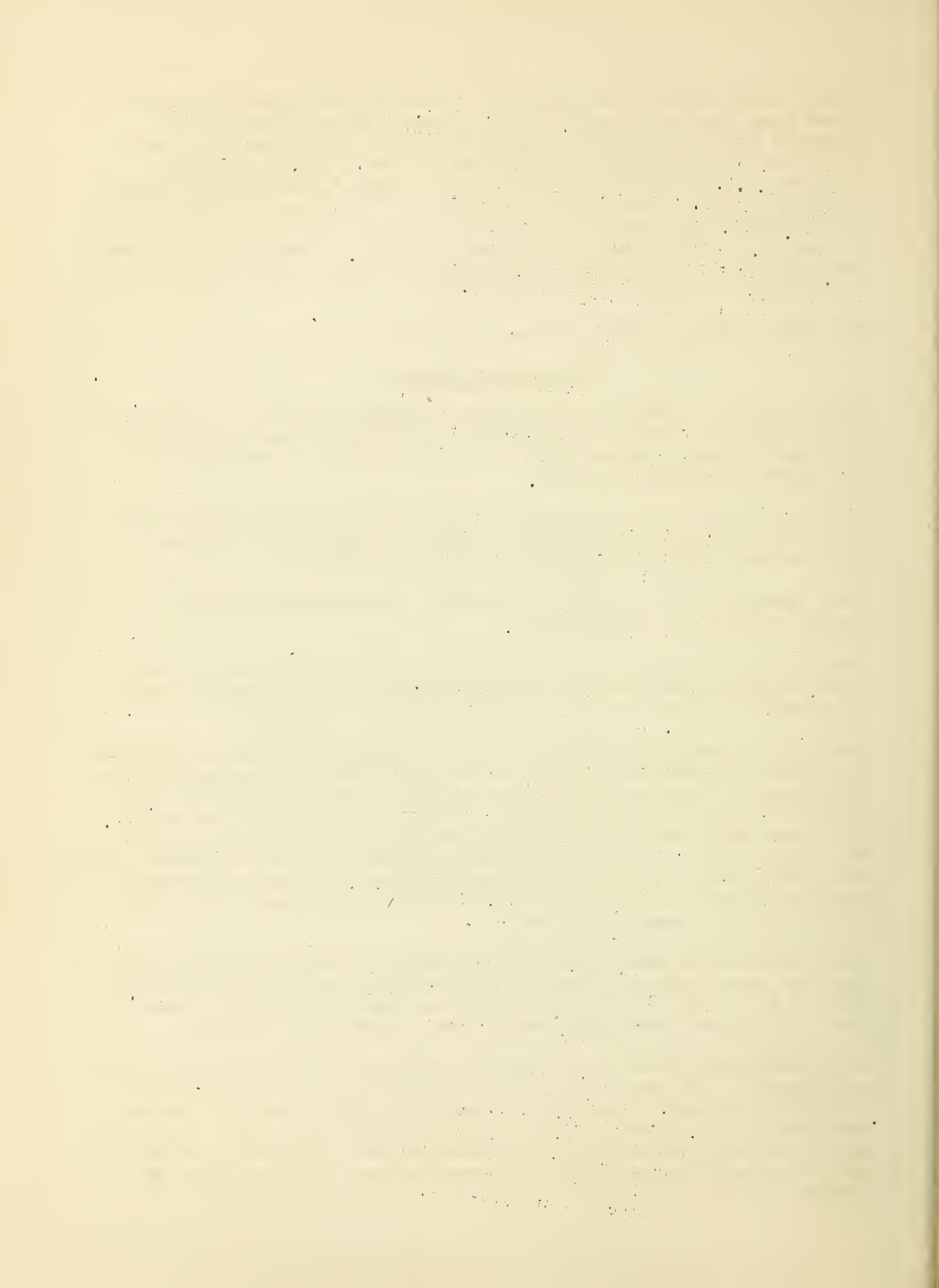
Drews Reservoir is full with far more water already passed through it than at any time in recent years.

Thompson Valley Reservoir had recently in storage 15,000 acre feet and if not already flowing over the spillway, soon will be. This will place approximately 19,000 acre feet in storage in this reservoir.

Summer flow (March-June, inclusive) of the Chewaucan River is expected to be at least as great as last year and should be about 140 per cent average. Honey Creek is expected to flow less than last year for this same period but its flow should equal 175 per cent average. The Warner Lake drainage has a snow supply nearly twice average and better than last year, assuring the Warner valley of heavy run-off for the second year in succession. Water will reach Bluejoint Lake in considerable volume this year and northerly extension of the Warner valley drainage waters will probably exceed anything in the past quarter century.

The high plateau of Hart Mountain Refuge seems an exception to the generally bountiful Lake County water supplies, as snowfall and precipitation there were less than usual and very much less than last year. However, range grass prospects now are better there than in other parts of the County.

Forage conditions on the high desert and in parts of the Fremont Forest are not very good. The grass season is retarded and range is 10 days to 2 weeks late, although not as greatly retarded as last year. The rise of Goose Lake waters is materially reducing pasture acreage around the Lake. Accurate figures are not available concerning Goose Lake water levels of past years but it seems likely that Goose Lake may this year reach the highest level since about 1910-1912.



Southern Oregon

North Fork of Rogue River at Station 722 above Prospect is forecasted to discharge approximately 389,000 acre feet during the six months ending September 30, 1943. This is equal to 140 per cent average (32 years) and 168 per cent of last year. Six months' flow for the same period last year was 232,761 acre feet. The mean monthly flow is estimated as follows:

	Second Feet Discharge	
	<u>1943</u>	<u>Normal</u>
April	2000	1133
May	1850	1238
June	1200	941
July	550	514
August	450	398
September	400	388

Total flow of Rogue River at Grants Pass will greatly exceed that of last year. Flow estimates for the low flow months follow:

	Forecast for 1943		Obtained in 1942	
	Mean	Low	Mean	Low
	<u>Monthly Flow</u>	<u>Monthly Flow</u>	<u>Monthly Flow</u>	<u>Monthly Flow</u>
July	1395 c.f.s.	1085 c.f.s.	1080 c.f.s.	865 c.f.s.
Aug.	1090 c.f.s.	910 c.f.s.	805 c.f.s.	769 c.f.s.
Sept.	1072 c.f.s.	900 c.f.s.	823 c.f.s.	776 c.f.s.

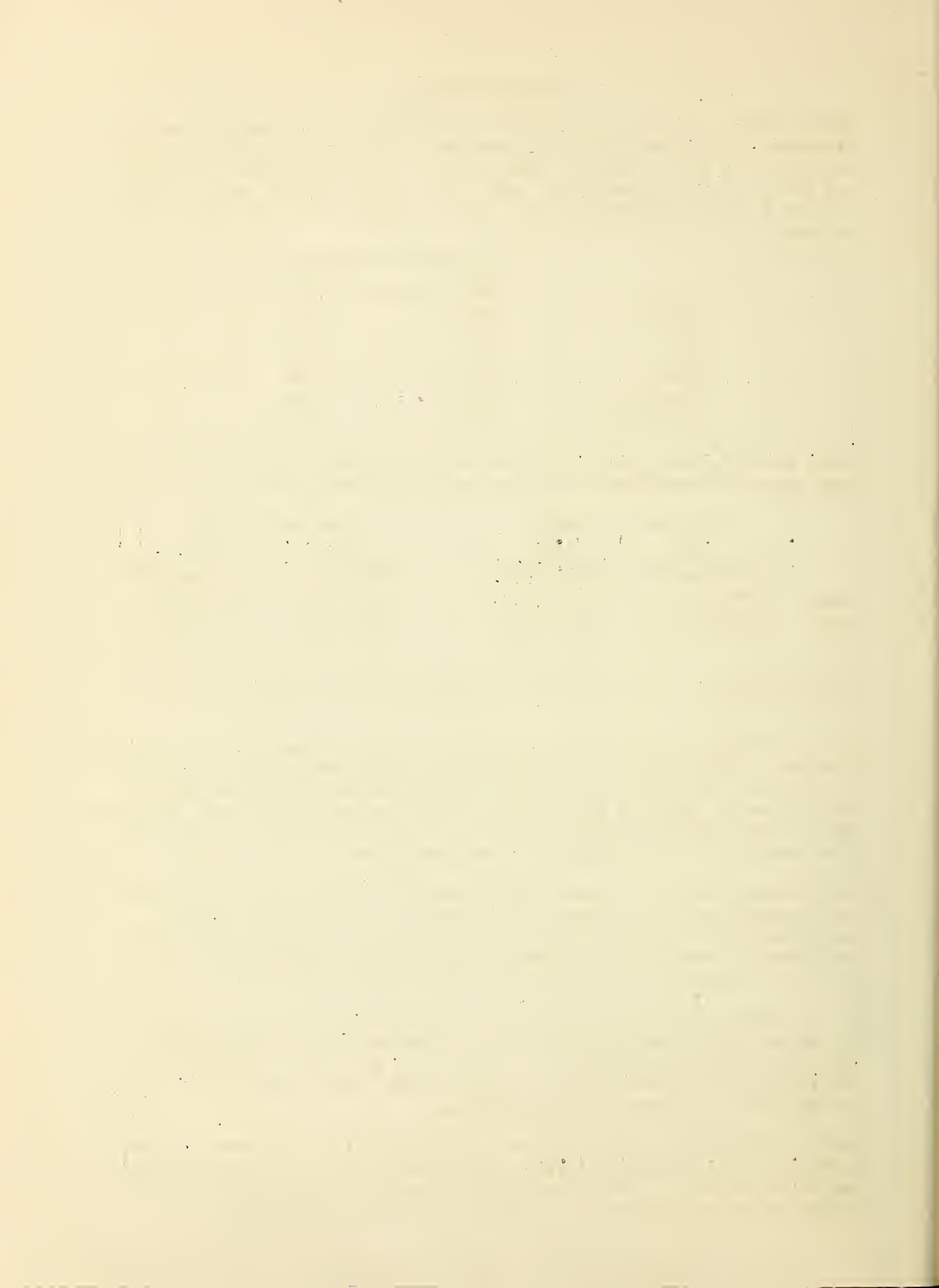
Flows at Gold Ray will be approximately 10 per cent greater than the above amounts.

Canal alternation is not expected this year by the Grants Pass Irrigation District. This will be the first year for some time that alternation has not been required. Alternation began last year on August 12, the year before on August 8 and the year before on August 10. Both deep and shallow soil moisture in crop lands near Grants Pass is good, better than usual, and no immediate need for irrigation is foreseen.

Small tributaries to the lower Rogue such as Evans Creek, Graves Creek and Jump-off Joe are expected to have low flow no greater than last year, and by the last of August some ditches can probably expect to be regulated in favor of those having prior rights. A sufficient supply is seen, however, and no serious shortages seem indicated.

On the main Applegate snow supplies and ground water storage indicate an adequate water supply for the entire season. So far as the Little Applegate and Illinois rivers are concerned, it will be surprising if low flow exceeds 80-90 per cent of last year. Some shortage is expected on the Little Applegate after August 15.

Water supplies for lands under the Talent Irrigation District are expected to be the most plentiful since 1938. Emigrant Reservoir is full and Hyatt Prairie Reservoir will fill. McDonald Creek canal through Wagner Gap seems unlikely to deliver water after August 15.





The Medford and Rogue River Irrigation Districts also have in prospect good water supplies for irrigation. Although Fourmile Lake is not expected to peak in storage above 13,000 acre feet, the available supply from this source is estimated 116 per cent average. Fish Lake Reservoir is expected to fill and the total water supply available past gage 7230 below Fish Lake on the North Fork of Little Butte Creek is set at approximately 24,000 acre feet or 152 per cent average. If this forecast is borne out, the discharge during the next six months will be the greatest since 1921.

Soil moisture in crop lands near Medford is better than last year.

On the Klamath Basin side of the Cascade mountains, the net inflow to Upper Klamath Lake for the streamflow year, October 1, 1942 to September 30, 1943, is expected to equal 1,575,000 acre feet, as against 1,093,600 and 950,600 obtained last year and the year before. Inflow for the six months ending September 30 is estimated at 674,000 acre feet, or 128 per cent average. 1942-43 inflow is expected to be the greatest since 1920-21 when the inflow was approximately 1,610,000 acre feet.

Most of the snow in the Gerber Reservoir watershed was gone on the 1st of April, the March 31 report from the Strawberry Station showing only 6.2 inches of snow with a water content of 2.4 inches, as compared to 17.0 inches with 5.6 inches of water on the same date last year. The months of November, December and January were unusually wet, with 13.05 inches, or over 200 per cent of average precipitation being recorded at Gerber Dam. The months of February and March were both dry, the precipitation recorded at Gerber Dam being about 83 per cent of average. Total precipitation for the stream year to April 1 recorded at this station was 16.86 inches, or about 143 per cent of average. Temperatures were above normal during March and caused early and rapid run-off which in turn resulted in an unusually high yield. The total run-off from this watershed for the stream year is estimated at about 97,000 acre feet, or about 186 per cent of average. About 42,000 acre feet were released during January, February and March for flood control, and the storage, all available, on April 1 was 75,500 acre feet, as compared to 57,900 on the same date last year. An additional 20,000 acre feet will be wasted during April so that the storage in Gerber Reservoir will be about 70,000 acre feet on May 1. This storage provides a 2-year supply for the lands served from this source.

In the Clear Lake Reservoir drainage there was no snow on the ground at the Crowder Flat snow station on April 1. Weather conditions during the winter on this watershed were somewhat different than those on Gerber and Upper Klamath, in that the storms during the early portion of the winter were lighter while the late storms in February and March were heavier. At Clear Lake Dam average or above average precipitation was recorded every month during the period from November to March, inclusive. The total precipitation recorded at this station for the stream year to April 1 was 9.63 inches, or 128 per cent of average. The total yield for the stream year 1942-43 is estimated at about 199,000 acre feet, or about 182 per cent of average. Of interest is the fact that the past four years have yielded the highest run-off for any four-year



period, being about 150 per cent of average. This would indicate that the ground water on this watershed is well replenished and that range conditions this year should be excellent. The total available storage on April 1 was 362,600 acre feet, as compared to 304,800 acre feet on April 1, 1942, and is the greatest since 1922. This storage assures all lands served from this source at least a three years' water supply.

Temperatures throughout the winter and spring have been above average and vegetation is well advanced; however, considerable of the project lands are still very wet and farming operations are very much retarded.

The growing season in Klamath basin is materially retarded from normal principally due to farm soils remaining too wet to work properly. The season is delayed from 2 to 4 weeks. Heavy inflow has occurred this year into the Tule Lake sump and pumping of this water into lower Klamath Lake has reflooded approximately 23,000 acres.

So far as soil moisture conditions are concerned, prospects for summer range are good although grass growth is retarded but is now starting to develop.

Flow of the North Umpqua River during the next six months ending September 30, is expected to be similarly in proportion to the average flow and to last year's flow of the North Fork of Rogue River.

\* \* \* \* \*





1/ The following organizations cooperate in the Oregon snow survey work:

STATE

Idaho Cooperative Snow Surveys  
Nevada Cooperative Snow Surveys  
Oregon Agricultural Experiment Station  
Oregon State Engineer and corps of State Watermasters  
Oregon State Highway Engineers

FEDERAL

Department of Agriculture  
    Forest Service  
    Soil Conservation Service  
Department of Commerce  
    Weather Bureau  
Department of the Interior  
    Bureau of Reclamation  
    Fish and Wildlife Service  
    Geological Survey  
    Indian Service  
    National Park Service  
War Department  
    Army Engineer Corps

PUBLIC UTILITIES

Eastern Oregon Light and Power Company  
Portland General Electric Company  
The California Oregon Power Company

MUNICIPALITIES

City of Corvallis  
City of LaGrande  
City of The Dalles

IRRIGATION DISTRICTS

Associated Ditch Companies  
Central Oregon Irrigation District  
Deschutes County Municipal Improvement District  
Grants Pass Irrigation District  
Jordan Valley Irrigation District  
Lakeview Water Users Incorporated  
Medford Irrigation District  
Ochoco Irrigation District  
Rogue River Irrigation District  
Talent Irrigation District  
Vale-Oregon Irrigation District  
Warm Springs Irrigation District

PRIVATE CORPORATIONS

Amalgamated Sugar Company

determined by melting a measured sample.  
(via Oregon Power Company's station.)



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